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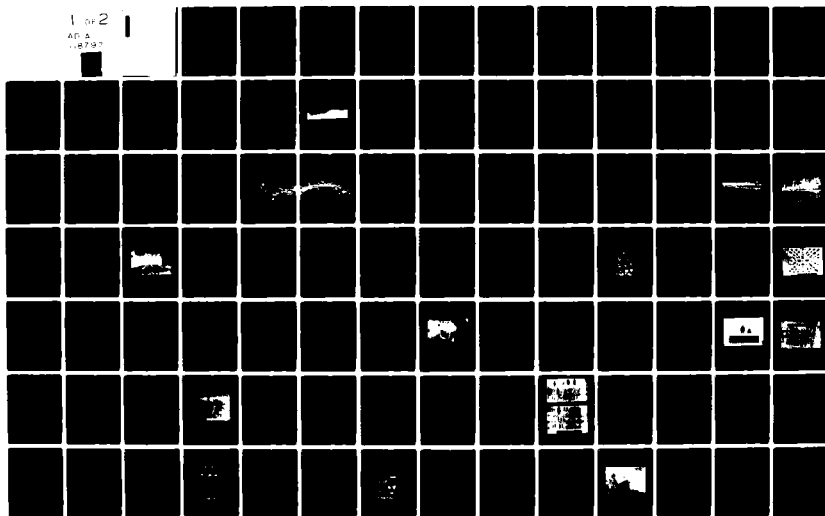
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PRELIMINARY INVESTIGATIONS; ARCHAEOLOGY AND SEDIMENT

GEOMORPHOLOGY, NAVIGATION POOL 12, UPPER MISSISSIPPI RIVER

BY

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## ABSTRACT

In March, 1981, Great Lakes Archaeological Research Center, Inc. entered into a contractual agreement with the Rock Island District Corps of Engineers to conduct a cultural resources survey on Corps owned or administered lands within Navigation Pool 12 in the Mississippi River.

In its initial form the project identified two primary goals: (1) generate a qualitative predictive model for site locations; and (2) evaluate the effects of erosion from maintenance of the pool on cultural resources within the pool. Preliminary survey work in Pool 12 by Mr. Boszhardt and inspection of depositional and erosional contexts with Dr. Richard C. Anderson, Augustana College, Dr. James C. Knox, University of Wisconsin, and Mr. R. Stanley Riggle, Iowa State Historical Department confirmed that recent (Late Woodland) prehistoric occupation debris lay buried under 1-3 m of recent alluvium. As a result of this knowledge the originally conceptualized sampling strategy and qualitative predictive model were abandoned. Survey coverage was biased to exposed erosional contexts except in instances where test excavation units were deployed as much for purposes of recording alluvial stratigraphy as for securing information on archaeological contexts.

The second goal of the project, to evaluate the effects of pool maintenance of cultural resources, has been realized. Fifteen of the 24 archaeological sites located through this preliminary survey and evaluation are currently being destroyed by erosional processes at work in the lowland floodplain.

Finally, past conceptualizations of the utilization and occupation of the lowland floodplain by prehistoric residents need to be re-examined. Extant models of transitory extraction camps or other short-term functionally specific occupations are not supported by the diversity of assemblages recovered during the survey. Thus, while the results of these investigations may create difficult management problems, the research potential of this previously unexplored habitat of the lowland floodplain of Pool 12 is dramatically underscored.

## ACKNOWLEDGEMENTS

Many individuals and institutions greatly aided our preliminary investigations of the archaeology and sediment geomorphology in Navigation Pool 12 of the Mississippi River. Available space prohibits an exhaustive tabulation of all who offered and are particularly noteworthy. Records, archives, and other documentation relating to the cultural resources of the project area were made available by the Office of the State Archaeologist of Iowa, the Iowa State Historical Department, Division of Historic Preservation, the Office of the State Archaeologist and the Historic Preservation Division of the State Historical Society of Wisconsin, and the Illinois Archaeological Survey. In addition, the Archaeological Laboratories at the University of Wisconsin-Madison and the University of Wisconsin-Milwaukee allowed examination of collections and made available reports dealing with investigations in surrounding areas of the Upper Mississippi River valley.

Geomorphological interpretations were made possible through the valuable assistance of Dr. Richard C. Anderson, Department of Geology, Augustana College and Dr. James C. Knox, Department of Geography, University of Wisconsin-Madison. As well, Dr. Anderson directed map study, sieve and pipette analyses of sediments, and compiled the preliminary report on the sediment geomorphology of Pool 12 incorporated within this report. His direction and interest in the field were particularly enjoyable and beneficial and are gratefully acknowledged. Finally, R. Stanley Riggle took time from his full schedule to accompany Dr. Anderson, Dr. Knox, and the field crew. His interest and expertise in the region were informative and productive.

Mr. Roy Eichhorn provided valuable assistance in directing us to useful records and archives housed at the Rock Island District, Corps of Engineers and was understanding with regard to both logistical difficulties and the absence of background data for the lowland floodplain. His interest in the region and understanding of the special difficulties are deeply appreciated.

Survey transportation was provided by Schubert's Guide Service in Galena, Illinois. The Schuberts were among a group of local residents who willingly shared their intimate knowledge of the river and the more recent history of Pool 12. Mr. Ray Miller, Mr. Donald O'Leary and his father, and Mr. George Bookless, all of Galena, Illinois, and Mr. Louis Harley of Massey, Iowa were most helpful in these regards.

Finally, local collectors of artifacts were in all cases uninhibited in providing locational information and presenting specimens for photographic recording. All expressed sincere interest in gaining further information and professional interpretation of their finds. Several of these collections are cited in the text of this report.

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### INTRODUCTION:

In March, 1981, Great Lakes Archaeological Research Center, Inc. entered into a contractual agreement with the Rock Island District, U.S. Army Corps of Engineers to conduct a cultural resources survey on Corps owned or administered lands within Navigation Pool 12 in the Mississippi River. Contract award was made following submission of the proposal in response to RFP No. DACW25-80-R-0017. However, because of the season of the award, field work did not commence until early June 1981. A total of eleven weeks were expended in the field. Dr. David F. Overstreet served in the capacity of principal investigator and Mr. Robert Boszhardt functioned as field and laboratory supervisor.

Project objectives as stated in the Scope of Work which is appended to this report as Appendix A were:

The purpose of this contract is to obtain a cultural resources survey and report for Pool 12 of the Mississippi River. The work will be a 100 percent cultural resource inventory of selected areas in Pool 12 in compliance with Executive Order 11593 and Public Law 93-291. The objective is to generate a qualitative predictive model for site locations and to evaluate the effects of erosion from maintenance of the pool on cultural resources within the pool.

The first objective, to generate a qualitative predictive model for site locations, unfortunately, has not been successfully developed from the data collected via this investigation. Of paramount importance here is the understanding of the sediment geomorphology in Pool 12. Initially, it was indicated that Great Lakes Archaeological Research Center, Inc. would conduct a systematic sub-surface investigation comprising some 5 percent of the Corps owned land. As U.S. Army Corps of Engineer holdings above the flat pool total approximately 5,100 acres our 5 percent sample would have totalled approximately 255 acres.

Following an initial shoreline survey of Pool 12 with Dr. Richard C. Anderson, Chairman of the Geology Department at Augustana College, Rock Island, Illinois and Dr. James C. Knox, Department of Geography, University of Wisconsin-Madison, Mr. Boszhardt and I concluded that we would not be able to provide the random stratified sampling procedure as originally conceptualized by U.S. Army Corps of Engineers personnel in the request for proposals. Field inspection, and earlier investigations by Mr. Boszhardt, had indicated that very recent historic occupational debris and very late prehistoric occupational debris lay buried under recent alluvium at depths ranging from 1-3 meters. These factors were discussed in a meeting with Rock Island District Corps of Engineers personnel and it was determined that we would have to bias our survey coverage with emphasis placed on exposed erosional areas to secure necessary planning data. As well, it was decided that the focus on exposed shorelines would provide the best appreciation of past land use on the flood plain and insular habitats which would be necessary for the fulfillment of the second objective stated in the scope of work: to evaluate the effects of erosion from maintenance of the pool on the cultural resources within the pool.

While some individuals will rightfully question the predictability for historic and prehistoric site locations owing to our biased survey approach, the results of the survey have allowed us to adequately and empirically address the second objective of critical interest in this study. Fifteen archaeological sites have been discovered in flood plain contexts within the confines of Navigation Pool 12. All of those sites are currently being destroyed by erosion which is associated with the maintenance of the 9 foot channel and the lock and dam system.

Two factors need be noted here. First, the rates of erosion, and hence destruction of the archaeological sites situated on flood plain or insular contexts varies. The majority of the fifteen loci at which prehistoric cultural debris was recovered can be classified as being immediately threatened by severe erosion. All of these sites are situated on main and side channels of the Mississippi River where, of course, one would expect scouring and other erosional factors to be most dramatic

given the hydrological dynamics of the riverine system. Three sites were located in backwater lake contexts and while erosion is not as drastic as in the main and side channels, it is clear that site destruction is in process. This variability can be correlated with the topographic setting of the sites. At backwater lakes, the sediment charge is greatly reduced causing less in the way of shoreline scouring even though inundation is apparently common.

The second factor requiring discussion is less clear and quantifiable. Based on our discussions with Dr. Anderson and Dr. Knox, as well as many other knowledgeable individuals, there is consensus regarding the effects of the lock and dam system on cultural resources. That is to say, all individuals consulted agree that navigation improvements and navigation practices contribute to erosion of landforms within the pool. However, there is not necessarily agreement on quantifying those contributions. In summation, the consensus opinion is that maintenance of the lock and dam system accelerates shoreline erosion. However, quantifying that acceleration is not possible at this time. In order to avoid meaningless equivocation, summaries of studies relating to the contributions of the lock and dam system are provided in the conclusions to this report.

Finally, the data generated by this investigation provide significant insights for those vested with the responsibility of managing cultural resources on Corps of Engineer land holdings, for those sediment geomorphologists or geologists working with problems of sedimentation and erosion within the Pool, and for prehistorians interested in the archaeology of the Upper Mississippi River Valley.

With regard to cultural resource management practices, we have provided a small and biased sample that, in spite of methodological limitations, provides an empirical basis for addressing and hopefully resolving adverse effects on the archaeological data base within the pool. Prior to this study attempts to address management problems were intuitive, sometimes based on faulty misconceptions owing to significant gaps in our knowledge of both cultural-historical frameworks, and largely ineffective. As a result of this study, a more meaningful grasp

of management problems as well as sound management practices can be implemented.

Geologists have not systematically studied rates of sedimentation and erosion within Pool 12. Our contribution to current and future studies stems primarily from the various locations in the pool where diagnostic, and thus dateable, artifacts have been recovered. The ability of archaeologists to provide good estimations of time of occupation of a given buried archaeological site presents sediment geomorphologists with an important heuristic device. It is now possible to calculate sedimentation rates at a variety of topographic situations within the navigation pool. From this understanding, sediment geomorphologists should be able to address changes in sedimentation and erosion processes directly related to the construction and maintenance of the lock and dam system.

Finally, prehistorians will be forced to rethink their conceptualization both of the culture history as well as the settlement and subsistence models for flood plain contexts in navigation Pool 12. Our data reveal that the flood plain contexts were utilized throughout the entire local Woodland sequence. More importantly though is a more sound understanding of the nature of that utilization. The cultural materials recovered during the survey phase of this investigation provide evidence for a full range of activities on flood plain sites rather than the more commonly accepted model of transitory extraction camps for aquatic resources. A conceptualization developed from the perspective of the 15 flood plain sites now known from Pool 12 holds forth a much more enduring and substantial prehistoric occupation and utilization of the flood plain than had previously been recognized or anticipated.

The report which follows is organized to allow the reader familiarization both with the generalized habitats encompassed by Pool 12 as well as a geomorphological overview of the landforms within the pool. A brief summary of previous investigations regarding cultural resources provides for an appraisal of previous interpretations of the regional archaeology as well as noting

major gaps or voids which influence those interpretations. The results of this investigation are segmented into major topographic-riverine contexts to assist in understanding the variation both of archaeological sites as well as current activities affecting those archaeological sites. The conclusions and recommendations provide both an assessment of the effects of the construction and maintenance of the lock and dam system on the sites we have located and alternative management measures to mitigate those effects. Much of the descriptive data that would be of use to various interested parties is included in appended tabular formats.

## PHYSICAL SETTING

Pool 12 is one of 22 artificial divisions of the Upper Mississippi River. The pools are the result of the installation of a lock and dam system put into effect in the 1930's as part of the nine foot channel navigation project (U.S. Army Engineers 1978, Tweet 1975: 102-111). Although the pools vary in ecological conditions, one can portray them as encompassing the lowland floodplain of the Mississippi River Valley. The borders of the lowland floodplain are in some places vertical bedrock walls (Figure 1) which outline the Mississippi River Trench, and in other places are raised Pleistocene terraces within the valley. Generally, biotic communities adapted to the surrounding uplands and those of the terraces differ substantially from those of the lowland floodplain. These differences are reflected in the physical setting of Pool 12.

Pool 12 is located between Lock and Dam No. 11 at the north end of Dubuque, Iowa and Lock and Dam No. 12 at Bellevue, Iowa. This pool represents a segment of the River approximately 25 miles in length. The width of the valley is between 1.5 - 1.75 miles across for most of the length of Pool 12. However, at the lower end of the pool the trench widens abruptly to over 2 miles at Lock and Dam No. 12. In Pool 13, below Lock and Dam No. 12, the trench continues to widen resulting in the broad Savanna Plain on the Illinois side.

Pool 12 is situated at the southwest edge of the unglaciated Driftless Area (Trowbridge and Shaw 1916). Consequentially, bedrock margins vary according to the degree of resistance of the formations to natural weathering processes excluding glaciation. The Driftless Area is a heavily dissected region characterized by mature dendritic drainages. Several secondary tributaries join the Mississippi River within Pool 12 including the Menominee, Little Menominee, Sinsinewa and Galena Rivers and Small Pox Creek on the Illinois side, and Catfish, Tete des Mortes and Spruce Creeks on the Iowa side.

Geologically Pool 12 lies at the irregular edge of the Niagara Cuesta (Figure 2). This cuesta marks the location of a hard sedimentary bedrock formation of Silurian age. In this

Figure 1: Survey Area, Navigation Pool 12.

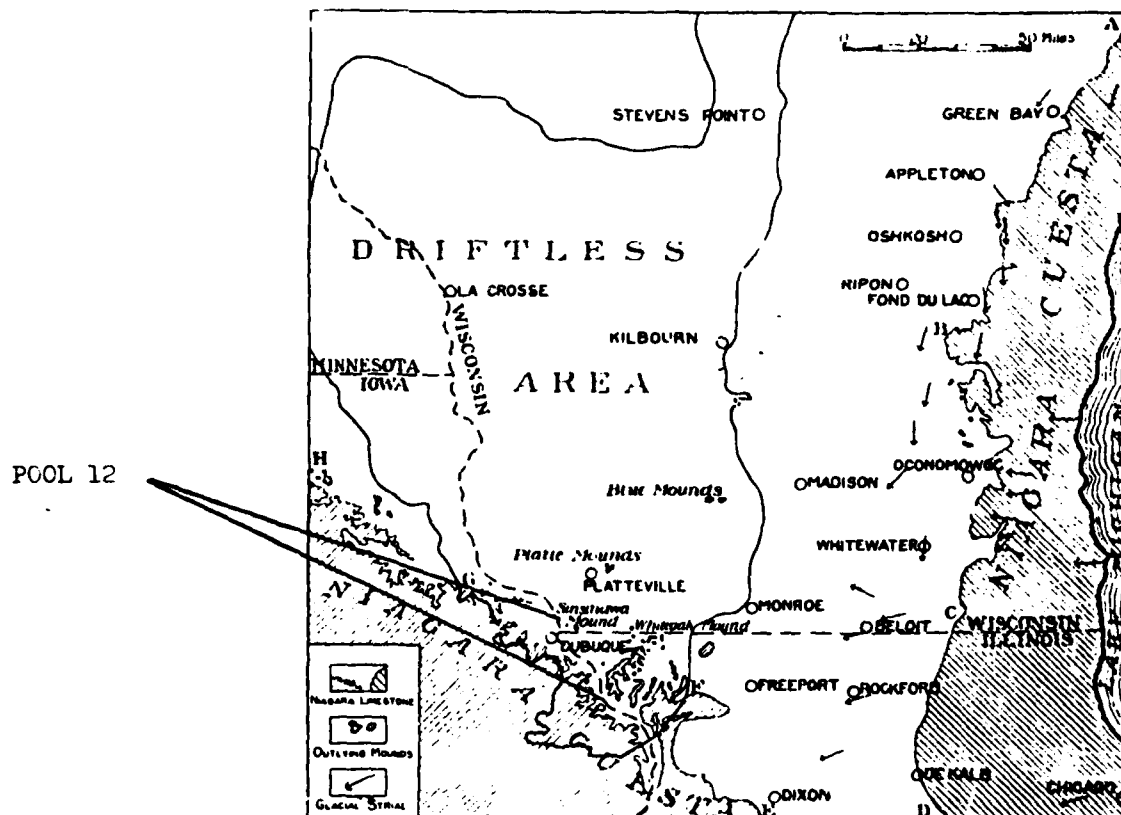


Figure 2: Navigation Pool 12 in relation to the Driftless Area.  
(After Martin, 1932)



region the direction of the cuesta is NW-SE, and is generally restricted to the Iowa side of the river. Outliers of this formation are found to the north and east in decreasing frequency from the edge of the cuesta. These outliers stand as the highest topographic relief in NW Illinois and SW Wisconsin.

Underlying the Silurian dolomites is less resistant Maquoketa shale of Late Ordovician age. Because of the relatively soft nature of this formation, Maquoketa surface topography is generally gently sloping, and is rarely exposed (Brown & Whitlow 1960: 23).

Beneath the Maquoketa shales lies the older Galena formation of Middle Ordovician age. This formation is similar to Niagara bedrock in that the rock is a resistant dolomite, frequently exposed along river channels or in quarry locations.

The Mississippi River at Pool 12 has cut through each of these bedrock formations forming a steep walled trench. At only a few places is the Niagara dolomite atop the Maquoketa and Galena formations immediately adjacent to the river. Where this occurs the bluffs are as high as 300' above the river. More typically, only the Galena formation outcrops directly along the river margins with the trench walls rising only 100'. Along the Iowa side of the trench where the Niagara Cuesta is a short distance from the river, a bedrock terrace occurs with the lower ledge being Galena formation capped to a degree with Maquoketa shales (Figure 3).

The surface of these bedrock formations form an upland region surrounding the Mississippi River trench. The soils on the uplands are primarily aeolian loess (Whitlow and Brown 1963: 156). These loessal deposits are an indirect consequence of continental glaciation.

Within the Mississippi River trench, the geological formations are alluvial in origin. Beginning with periods of glacial melting and torrential flooding, outwash consisting of gravels, sands and silts began to fill the valley. One record documents 337' of such deposits above the bedrock floor of the valley near Dubuque, Iowa (Brown and Whitlow 1960: 8).



Figure 3: Topography of Bedrock formations.

Two distinct alluvial formations are recognizable within the valley trench at Pool 12. The first is a series of Pleistocene terraces formed from the sand and gravel glacial outwash. These occur at several locations bordering the river bottoms and along many of the secondary tributaries (Figure 1). At least two episodes of outwash deposition are suggested by the presence of high and low terraces (Brown and Whitlow 1960: 8). The higher terraces stand about 25' above the lower, and occur at the north end of Bellevue and at Massey on the Iowa side. The low terraces are more frequent and tend to be wider. These formations are subject to inundation during periods of extreme high flood stages.

The second alluvial formation found in the valley at Pool 12 is the lowland floodplain. These lands are comprised of forested islands, levees and lowlying extensions of the mainland below an elevation of ca. 620' (M.S.L.). Floodplain formations consist only of sands and silts and represent Holocene deposits. The lowland floodplain has not been a subject of study by geologists until recently, therefore information on the history of the fluvial morphological processes in the Upper Mississippi River is lacking. The Lowland Floodplain is owned and managed by the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service, and directly affected by management of the River.

Each of the geological formations described above vary in available lithic resources known to have been utilized by aboriginal populations. Cherts, exploited for manufacture of flaked stone tools, are common to both the Niagara and Galena Formations (Brown and Whitlow 1960, Whitlow and Brown 1963). Cherts from these formations were probably most readily accessible as colluvial outwash forming the beds of secondary drainages. Chert is also available in the form of glacial outwash cobbles in the sand and gravel deposits of the Pleistocene terraces. These terraces would have been the only local source of other cobbles for use as hammerstones or grinding-stones. Lead ore "galena" was available in exposures of the Galena formation. Prehistoric utilization of this mineral, as a trade item and suggestively as a

pigment, is well documented (Walthall 1981). Due to the nature of the land forms of the lowland floodplain, no lithic resources exist there.

#### CLIMATE

Historically Pool 12 lies in a region where the climate is classified as continental having cold humid winters and hot summers. Records at Dubuque, Iowa between 1910-1963 indicate the annual precipitation varied from 21.38 to 40.34 inches with a mean of 33.97 inches, and the average annual temperatures ranged from 43.9 to 53.3° F. with a mean of 48.2° F. Mean daily temperatures recorded from 1931 to 1952 differ from ca. 6-8° F. in January to 86-88° F. in July. Between 1921 and 1950 the number of frost-free days averaged about 143 (UMRBCC 1970: C).

Studies of past climate indicators such as pollen profiles indicate several periods of climate change in the Upper Midwest since the retreat of the last glacier ca. 15,000 years ago. Webb and Bryson (1972) have interpreted pollen profiles from several sites in this region including the Kirchner Marsh site in Southeast Minnesota. Their reconstruction indicates cold, moist and cloudy conditions between 15,000 and 11,300 B.P. About 11,300 B.P. a somewhat warmer and less cloudy climate is indicated. This warming trend continued to about 4,700 B.P., and by 7,200 B.P. the climate had begun a period of maximum dryness which is probably associated with the eastward expansion of the prairie peninsula. The extreme dry period was interrupted by two episodes of increased precipitation and lower temperatures at 5,500 and 4,700 B.P. By 2,000 B.P. the conditions had become cooler and more moist. This general climatic pattern has continued to historic times (Webb and Bryson 1972: 99-107).

#### FLORA AND FAUNA

Cleland (1966: 11-12) has summarized the modern ecology of a vast area termed the Illinoian Biotic Province, within which Pool 12 is situated. This province corresponds to the prairie peninsula (Brown 1965), and is characterized as having a prairie-

oak savanna type vegetation in the uplands which are contrasted by mixed deciduous forests in the floodplain valleys. Holocene climatic studies have documented a fluctuating distribution of the prairie peninsula, thus the modern floral and faunal species lists may not be accurate reconstructions of past biotic communities. However, data on past floral and faunal inhabitants for particular periods in this region is scanty.

A report by the Upper Mississippi River Basin Coordinating Committee (1970:L14-31) includes a summary of the modern game species available in the Upper Mississippi River Basin.

TABLE 1 lists the species whose distribution overlaps the Pool 12 area.

<u>MAMMAL</u>	<u>BIRD</u>	<u>FISH</u>
White-tailed Deer		Northern Pike
Red Fox	Bob White Quail	Yellow Perch
Grey Fox	American Wood Cock	Small Mouth Bass
Eastern Grey Squirrel	King Rail	
Eastern Fox Squirrel	Hungarian Partridge	
Cotton-tail Rabbit	Duck (variety of species)	
White-tailed Rabbit	Geese (several species)	
Raccoon		
Opposom		
Beaver		
Muskrat		

Obviously, the species noted above are not exhaustive of the total faunal inventory in this area. For example, numerous species of non-game fish are also available and being harvested by commercial fisheries. In addition, the availability of particular species varies according to habitat preference. For example, species specifically adapted to the wet environs of the lowland floodplain will not be found in the surrounding uplands or even on the adjacent Pleistocene terraces.

As noted above, past climatic changes have certainly altered the floral and faunal composition in this region (e.g. Cleland 1966: 13-36), as has historic land modification. The General Land Office (G.L.O.) Survey Records provide a fairly systematic

representation of the vegetation prior to recent drastic land use changes (Bourdo, 1956; King, 1978). These records were made of the townships forming the Illinois side of Pool 12 in the winter of 1839-40 (Bennett 1839-40). The G.L.O. records for townships T27N R1W and 1E, T28N R1E and 2W and T29N R2W were reviewed for the purpose of identifying vegetation similarities or differences between the uplands, Pleistocene terraces and the lowland floodplain.

The G.L.O. records for northwest Illinois document an upland vegetation similar to that described by Cleland for the Illinoian Biotic Province, i.e. very scattered oak and hickory with hazel underbrush. Nearer the Mississippi Valley the land is described as broken, an obvious reflection of the deeply dissected lands, and more wooded than further to the east where the land becomes more rolling and contained a truer prairie cover. The Pleistocene terraces are also described as having an oak savanna like environment. For example, the area near the mouth of Small Fox Creek is described as "sand, broken, soil good, fit for cultivation - Timber White, Black and Burr Oaks + Hickory - very scattered" (Bennett, 1839-40: Book 400:356).

Cleland lists as the fauna of the Illinoian Biotic Province only those species adapted to grassland environs, which suggestively would include the Uplands and Pleistocene terrace formations near Pool 12. These species include: Badger, Spotted Skunk, Coyote, Franklin Ground Squirrel, Thirteen-lined Ground Squirrel, Fox Squirrel, Plains Pocket Gopher, Prairie Vole, Jack Rabbit, Elk and Bison (1966:12).

Although the environment of the Pleistocene terraces appears to have closely resembled that of the uplands, in terms of human adaptive strategies, the location of the terraces in riverine valleys probably offered a more desirable setting for prehistoric occupation than did the uplands. This may be especially true during the Woodland segment of the prehistoric continuum as suggested by subsistence-settlement reconstructions in the Upper Midwest (e.g. Struever, 1968).

Both the uplands and Pleistocene terraces bordering Pool 12 have undergone considerable environmental change due to historic impacts such as farming, quarrying and settlement.

The G.L.O. records for the lowland floodplain describe a completely different environment than those recorded on the uplands and Pleistocene terraces. Survey notes were made for the section lines as far as the east bank of the Mississippi River channel itself. Consequently, the surveyors crossed numerous sloughs, lakes, levees and islands. Vegetation records are fairly consistent listing Maple, Birch, Ash, Willows, Cottonwood, Hackberry, Linn (basswood) and oaks with underbrush consisting of weeds and vines. (Bennett 1839: 409)

Faunal resources of the lowland floodplain are substantially more diverse than those available in the surrounding uplands. The lowland floodplain supports White-tailed Deer, though not in great quantity, and a few other terrestrial mammals including several species of Squirrel. The major difference in faunal resources of the lowland floodplain from those of the uplands are species adapted to water including riparian mammals, such as Beaver and Muskrat, various reptiles, including several species of Turtle and Snake, waterfowl, including seasonal and year-round occupant species of Duck and Geese, numerous species of Fish and fresh water Naiades.

Alterations to the lowland floodplain ecology have resulted from historic alterations. The following history of Euro-American activity and land modification summarizes the changes which have created the present condition of the river.

The earliest historical record of European observations of the Upper Mississippi River are the accounts of Marquette and Joliet's discovery of this river. These explorers travelled through what is now the Pool 12 area in the spring of 1673 (Marquette 1966). However, no description of this stretch of the river is given. The accounts state that the explorers discovered nothing from entering the river at the mouth of the Wisconsin, until reaching a path leading to an Illini village well to the south of Pool 12 (Marquette 1966:113, Temple 1977:15-18)

By the late 18th century, the French had learned of mineral resources, including lead, in the Upper Mississippi Valley. During this period both Perrot and Le Sueur established minor mining operations in this region. (Thwaites 1895:273-74). However, it was not until 1788 that extensive exploitation of lead by Europeans began in the Pool 12 area. The French trader, Julian Dubuque, became the first European to formally obtain rights from resident Indian groups (the Fox) to mine lead deposits on the Iowa side of the river and established a settlement with a smelting furnace at the mouth of Catfish Creek. (Walthall 1981:19, Iowa site record for 13Db9).

Beginning in the early 1800's, American settlers were drawn to the Pool 12 area by the lead industry. While most of the activity centered around the town of Galena, several accounts indicate islands in the lowland floodplain were also affected. For example, in 1811 George Jackson had a smelting log furnace on an island in the river opposite the mouth of Catfish Creek (Thwaites 1895:292). This operation was abandoned a few years later; however, Schoolcraft mentions another smelting operation on an island in the river in 1820 (Walthall 1981:19), and again in 1822 an island smelting establishment is documented (Meeker 1872:272). These island smelters appear to have obtained ore and incompletely burned ashes from Indian miners on the Iowa side of the river.

Prior to this period, the river was primarily in pristine condition. As an 1818 account describes it:

From St. Louis to Prairie du Chien the Mississippi is generally bordered by low banks, with bottoms from a mile to four miles wide, subject to innundation. Those bottoms are composed in part of prairie, covered with high grass or marshes, and in part with land heavily timbered with walnut, black and white sugar tree, Mulberry, Ash, and Oak of all kinds. These possess a soil of the most luxurient kind. (Tanner 1879:287)



By the mid-1820's, the Pool 12 area was rapidly becoming a frontier center based on the lead industry. U.S. Government control over the lead market was strict. Of relevance is an 1826 regulation which required residents of the Galena area to obtain all wood for personal use, such as fuel, fencing and building, "from islands in the Mississippi, and from no other place in the vicinity, as timber elsewhere is reserved for the purposes of smelters and lessees". (History of Jo Daviess County 1878:266) There is no record of the effects of these early island timber harvests, however, it is likely that increased erosion began at this time. During this same period land clearing of the surrounding uplands for smelting and agricultural purposes began to increase sediment run-off. From the mid-1800's to the present, Euro-American development of this region and further up the Mississippi River Basin has resulted in accelerated erosion and sedimentation (U.S. Army Engineers 1978:1-1).

In 1824 the first farm on the lowland floodplain was established. (History of Jo Daviess County 1878:244) Several farmsteads at the floodplain margins and on the uplands are noted on the U.S. Government Land Office survey plat maps. Farming of the lowland floodplain continued until the purchase of these lands by the government for the construction of the nine foot channel lock and dams (Mississippi River Commission 1892-1893, U.S. Army Engineers 1978:5-16).

Government aid for navigational improvements began by 1822 with authorization for the removal of snags, shoals and sand bars. (U.S. Army Engineers 1978 1-2) In 1878 Congress approved a minimum 4.5' channel project (Tweet 1975:49-58). This project resulted in the construction of numerous closing dams and wing dams which constricted and directed the flow of the current into a main navigation channel. The 1892-93 Mississippi River Commission maps covering the Pool 12 area (Charts 159-161) indicate several dam structures in place by that time. In addition, by 1880, sedimentation in the Galena River had become such a hinderance to commercial navigation that dredging was initiated, and by 1892 a lock and dam was installed at the mouth of this river (Tweet 1975:59, M.R.C. 1892: Chart 160).

Dam construction continued to the 1930's with additional emphasis following congressional approval of a 6' low water minimum for the main channel in 1905 (Tweet 1975:97-100). The impacts of these artificial devices was that of permanently determining the course of the river. Undoubtedly erosion of the shorelines bordering the main channel was accelerated following these navigational improvements. In fact during the 4.5' channel period, bank protection measures were begun as a by-product of the effects of the wing dams (Tweet 1975:54). At the same time sedimentation of backwater areas and side channels since cut off by closing dams increased.

In the 1930's, the minimum low water channel level was again increased, this time to 9.0' (Tweet 1975:102-111, U.S. Army Engineers 1978 1-2). In order to attain this goal, it was necessary to construct the lock and dam system which now dominates the Upper Mississippi River. Environmental changes which have resulted from this project have been more drastic than any previous impacts to the river (Tweet 1975:102, U.S. Army Engineers 1978).

A detailed description of the environs of the lowland floodplain is presented in the U.S. Army Engineers Report on Fish and Wildlife Habitat Changes Resulting from the Construction of the Nine Foot Channel in the Upper Mississippi River (1978).

In summation, vegetation species on the lowlands consist of Silver Maple, River Birch, American Elm, Green Ash, Willows, Cottonwood, occasional Oaks, Dogwood, Sumac, Rose, Plums, Gooseberries, Service Berries, Wild Current, Mulberry, Wild Grape, Poison Ivy, Nettle, etc. Prior to the construction of the Locks and Dams vast areas of sedge meadow occurred offering rush type grasses. Comparison of pre-dam and post-dam vegetation records indicate that forest species composition has changed. Most notably has been the reduction in the number of mast producing trees (U.S. Army Engineers 1978:5-8). The greatest affect of the pooling resulting from the lock and dams has been the loss of nearly one-half of the forest in Pool 12 due to inundation. (U.S. Army Engineers 1978: Appendix A: 9 and 10). Species changes have also resulted from pollution and over exploitation (U.S. Army Engineers 1978: 5-4, 5-5, UMRBCC 1970: L9, L55-57).

## GEOMORPHOLOGY OF POOL 12--MISSISSIPPI RIVER

Introduction. This brief report on the geomorphology of Pool 12 is a contribution to a larger study of the archaeological resources of the Pool. It is based upon map study, sieve and pipette analyses of sediments collected on the alluvial islands, and three days of field observations. Because the study was thus limited in both time and space, it has not been possible to do more than identify the important geomorphic processes and features. Nevertheless, it has been possible to formulate some generalizations which may be useful in accounting for the distribution of archaeological materials in the Pool.

Geological setting. Pool 12 lies on the southwest border of the Driftless Area (Figure 4), a region of intricate stream dissection where local relief in places exceeds 600 feet. The topography is developed upon sandstone, dolomite, and shale bedrock of Paleozoic age (Figure 5). Within Pool 12 these rocks dip gently southwestward so that the oldest rock exposed on the valley walls occurs at the north end of the Pool, the Decorah Formation of middle Ordovician age. Rocks as young as middle Silurian occur high on the bluffs in the central and southern parts of the Pool. Throughout the length of the Pool the Galena dolomite forms the most conspicuous portions of the bluffs and in many places rises as vertical faces at the foot of the valley wall. The bedrock floor of the valley lies at depth in excess of 300 feet below the present floodplain, as indicated by the well of the Star Brewing Company in Dubuque (NW 1/4, Sec. 30, T.89N., R.3E.) which "penetrated 337 feet of gravel, sand and silt before entering bedrock" (Whitlow and Brown, 1960).

Hence at the northern end of the Pool the buried portion of the bedrock valley has been cut downward into the poorly-consolidated St. Peter Sandstone. This accounts for the somewhat greater width of the valley at Dubuque, almost three miles, as compared with the two-mile width through most of the Pool. At the lower end of the Pool the width increases to almost four miles at Bellevue as the southwest dip of the strata brings the weak Maquoketa Shale down to floodplain level.

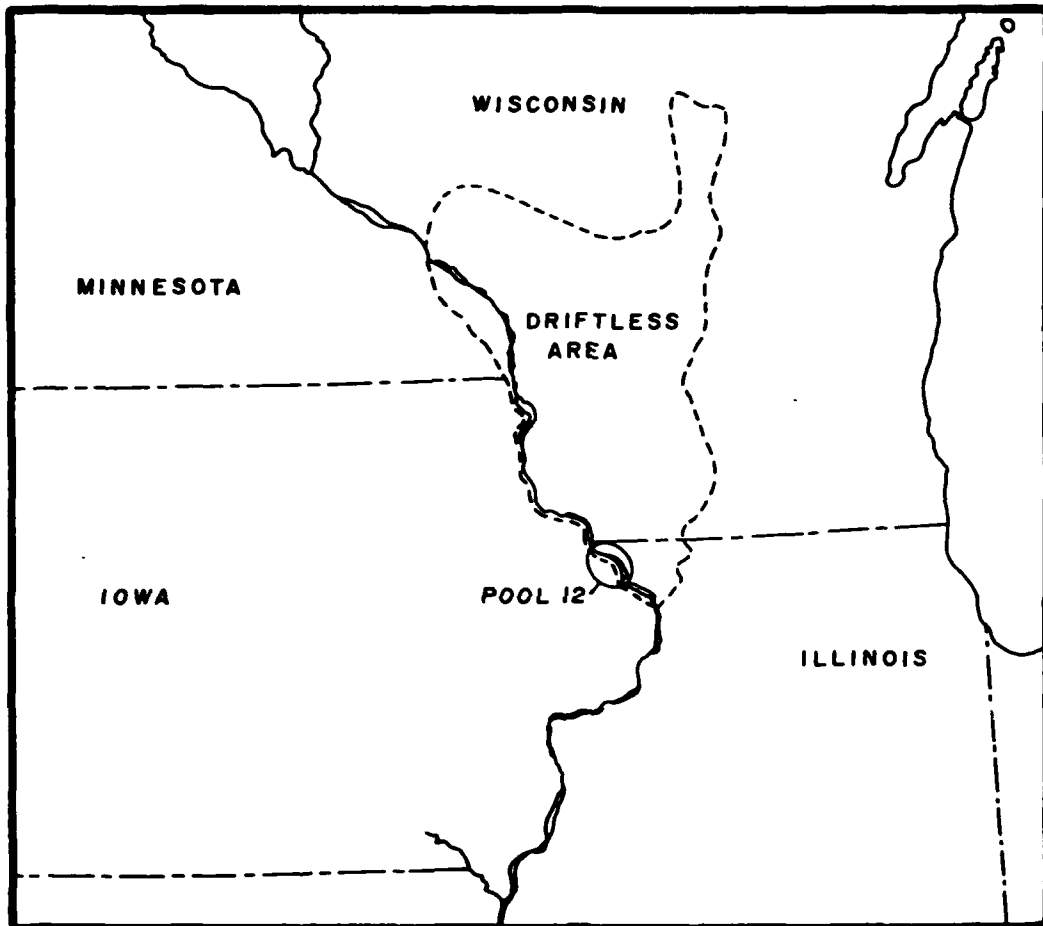


Figure 4: Pool 12 and the Driftless Area.
















Sys-tem	Series	Group or Formation		Description	Average thickness in feet	
SILURIAN	Middle & Lower			Dolomite, buff, cherty; <u>Pentamerus</u> at top	90	200
				Dolomite, buff, cherty; argillaceous near base	110	
ORDOVICIAN	Upper	Maquoketa shale		Shale, blue, dolomitic; phosphatic fauna at base	108-240	
		Galena dolomite		Dolomite, yellowish-buff, thin bedded shaly	40	225
			Dolomite, yellowish-buff, thick bedded; Receptaculites in middle	80		
			Dolomite, drab to buff, cherty; Receptaculites near base	105		
	Middle	Decorah formation		Dolomite, limestone, & shale, green & brown; phosphatic nodules & bentonite near base.	35-40	280-320
		Platteville form.		Limestone and dolomite, brown and grayish; green, sandy shale & phosphatic nodules at base	55-75	
		St. Peter Sandstone		Sandstone, quartz, coarse, rounded	40+	
	Lower	DISCONFORMITY				
Prairie du Chien group (undifferentiated)			Dolomite, light-buff; cherty; sandy near base and in upper part; shaly in upper part	0-240		
CAMBRIAN	Upper	Trempealeau formation		Sandstone, siltstone, and dolomite	120-150	
		Franconia sandstone		Sandstone and siltstone, glauconitic	110-140	
		Dresbach sandstone		Sandstone	60-140	700-1050
		Eau Claire sandstone		Siltstone and sandstone	70-330	
		Mount Simon sandstone		Sandstone	440-780	

Figure 5: Generalized stratigraphic column for Pool 12 (after Heyl, et al, 1959).

Within Pool 12 the valley consists of relatively short south-to-southwest trending segments alternating with somewhat longer southeast-trending segments. Thus from Lock and Dam 11 at mile 583 to mile 579 the valley trends southwestward; from mile 579 to mile 574.5 the orientation is to the southeast; between mile 574.5 and mile 571.5 there is a slight inflection toward the south-southeast; from mile 571.5 to mile 562 the orientation is again to the southeast; from 562 to mile 558 the valley trends south; at mile 558 the orientation trends once again to the southeast as far as Lock and Dam 12, at mile 556.7, and beyond. This angular course of the valley is a result of the generally south-flowing river encountering and "stepping across" the southwest-dipping strata. The southeast-trending segments parallel and are controlled by the strike of the strata. This suggests that the course of the river is not adjusted to the geologic structure, which in turn suggests that the river has not followed this course for an extended period. It seems unlikely that this is the preglacial course of the river, but further discussion of this matter is beyond the scope of this report.

Alluvial sediments. The distribution of alluvial sediments within the Pool is shown on Figure 6. Late Pleistocene terraces of glacial outwash occur both along the main valley sides and as slackwater deposits in the tributary valleys. They are more extensive where the valley is wide at the upper and lower ends of the Pool than they are in the narrower mid-section. Though they were not studied in any detail, these terraces can be described, in general, as follows: 1) they occur at several levels ranging in elevation from 620 to 680 feet above sea level, but they occur most commonly about 640 feet (river pool level is normally 592 feet); 2) they consist largely of medium-grained, pebbly sand; 3) in places in the southern part of the pool, and particularly in tributary valleys, the terrace sands are interbedded with tan and red silt in uniform layers up to several centimeters thick; 4) the terraces are the exposed portion of the thick deposit of glacial outwash which partially fills the valley (Figure 7). The terraces have not flooded during historic time and probably not since the beginning of Holocene time (10,000 years ago).

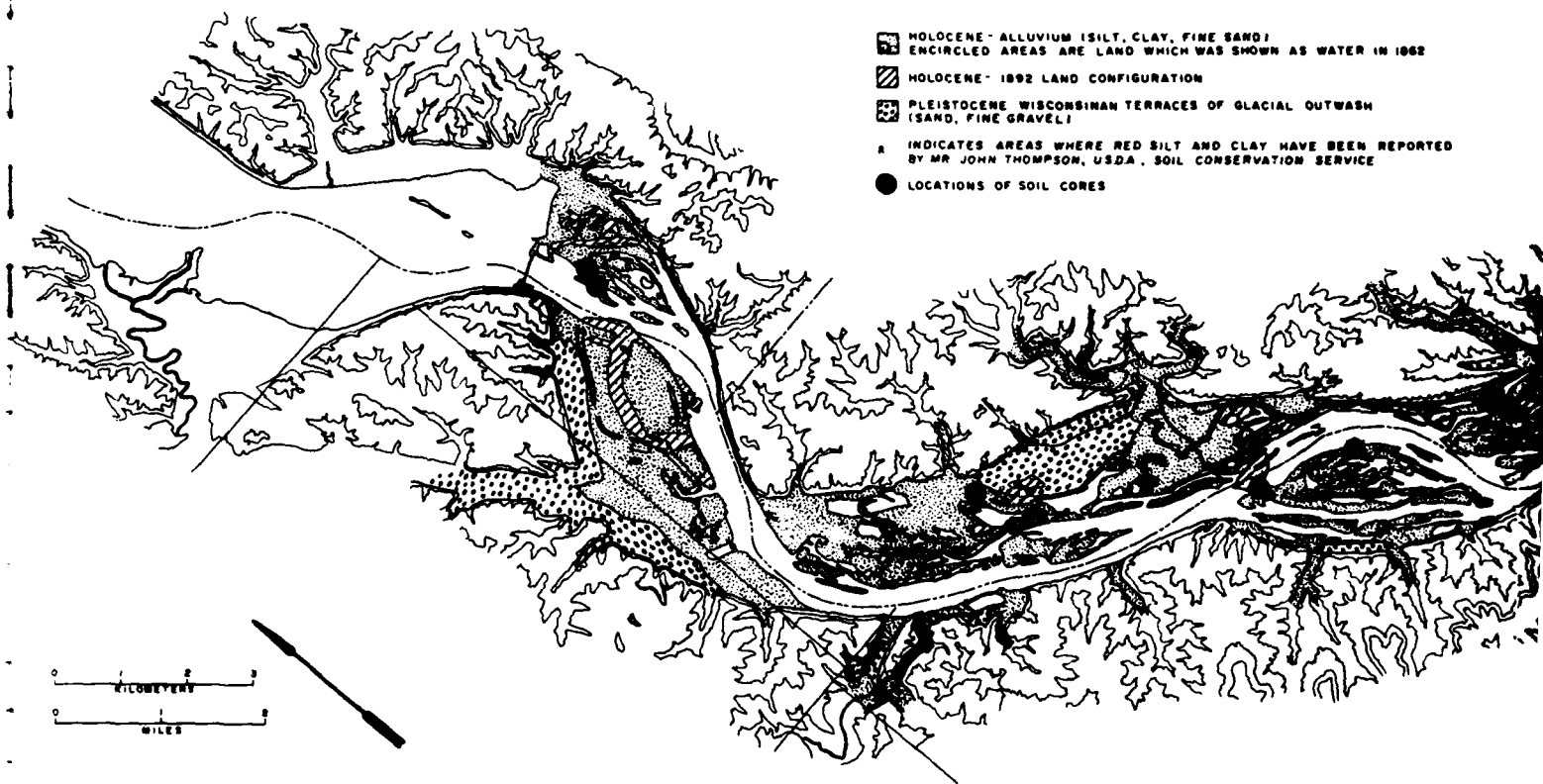


Figure 6: Alluvial Sediments.





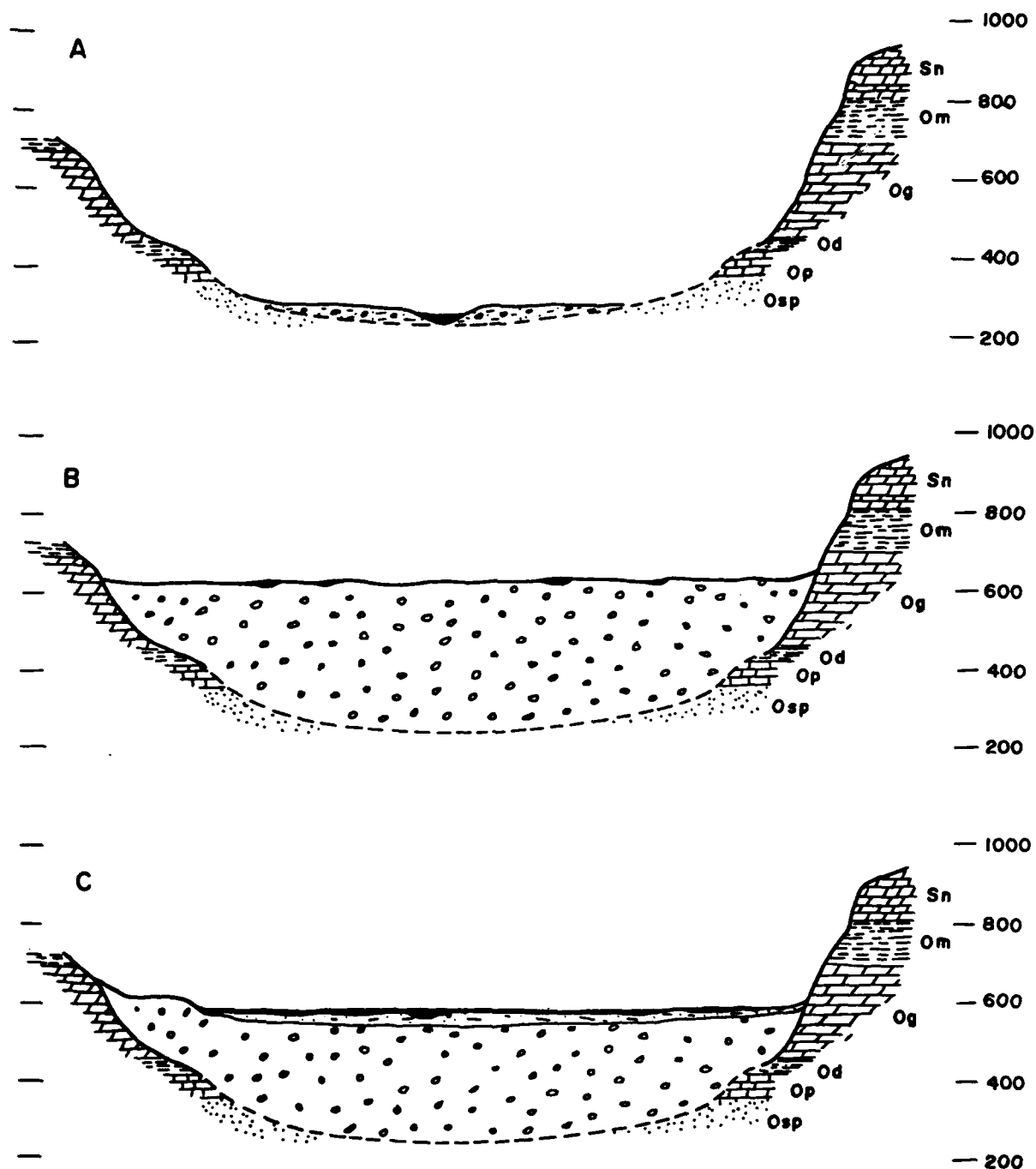


Figure 7: Generalized History of the Mississippi River Valley in Pool 12.

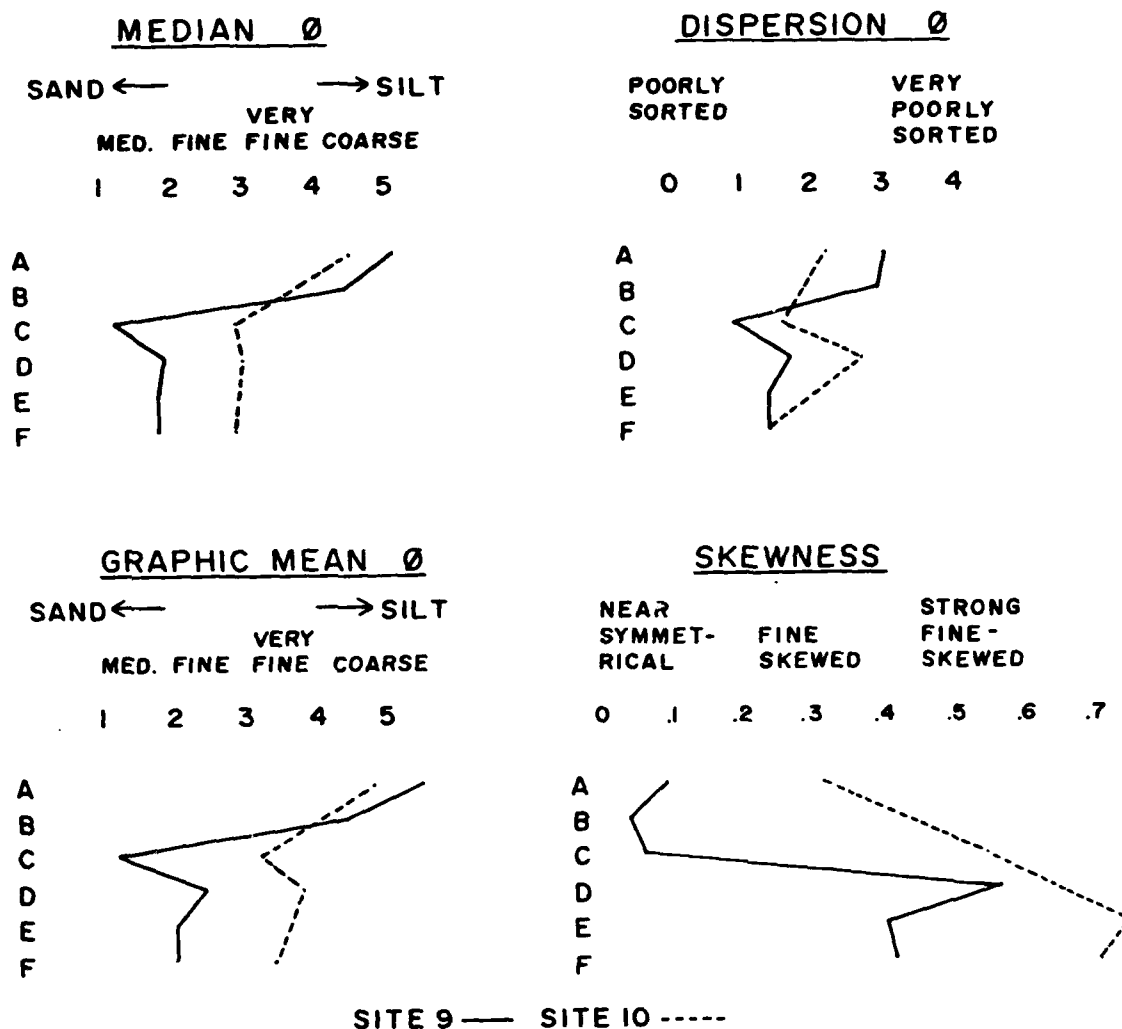
- The bedrock valley is carved, possibly in pre-glacial times, more likely as a result of drainage diversion by glacial ice during Pleistocene time.
- The bedrock valley is partially filled with glacial outwash sand and gravel. No doubt several cycles of cutting and filling occurred.
- The glacial outwash is partially removed by erosion in latest Pleistocene and Holocene time (ca. the last 11,000 years) producing terraces and the present floodplain. Holocene alluvium deposited.

Sn-Silurian dolomite; Om-Maquoketa Shale; Og-Galena dolomite; Od-Decorah formation; Op-Platteville formation; Osp-St. Peter Sandstone.

The alluvial sediments of the modern floodplain lie at elevations below 620 feet. No information is available about the thickness of these sediments in Pool 12, but it is probably comparable to the maximum pre-dam depth of the channel itself, about 20 feet, as shown on the Mississippi River Commission maps of 1892. These sediments were sampled at several places within the Pool (Figure 6), and detailed sieve and pipette analyses were conducted on suites of samples collected at sites 9 and 10, at the lower and upper ends, respectively, at Hale Island, at mile 563 in the lower portion of the Pool. The results of these analyses are summarized in Figure 8, and the raw data and graphs of cumulative weight percent are included in the Appendix C. Sediment particle size is expressed in phi values. These can be converted to other units by reference to Table 2.

The samples range in size from poorly sorted medium silty sand to very poorly sorted coarse sand silt (Figure 8). Except for the upper three samples at site 9, which have a near symmetrical size distribution around the mean, all the samples are strongly fine-skewed, having more material finer than the mean than would be the case if the distribution were symmetrical. The change in the grain-size parameters (medium, mean, dispersion, skewness) with depth at the two sites is remarkably similar (Figure 8). In general, the upper samples at each site, levels A and B, are finer-grained, more poorly sorted, and more symmetrically distributed around the mean than those below. The contrast between the samples at levels A and B and those from levels C through F is very marked, but its significance is not at all clear. It may simply reflect the inherent variability of alluvial sediments. The fact that these contrasts are present at both sites indicates that the same sequence of events occurred, probably simultaneously, at both sites. The coarser, sandy sediments below may represent natural levee deposits which were later covered by backswamp silt as the channel migrated and the locus of natural levee deposition moved away from these sites. Comparison of modern maps with those of 1892 show that Hale Island is the western, more elevated, portion of what was once a much more extensive island (Island 241) prior to inundation by the waters ponded behind Lock and Dam 12 (Figure 7). Prior to

# SIZE PARAMETERS



**MEDIAN:** 50th weight percintile ( $\phi_{50}$ ); half of sample larger, half smaller, by weight percent.

**MEAN:** Graphic mean;  $= \frac{\phi_{16} + \phi_{50} + \phi_{84}}{3}$

**DISPERSION:** Inclusive graphic standard deviation, a measure of uniformity, or "sorting,"  $= \frac{\phi_{84} - \phi_{16}}{4} + \frac{\phi_{95} - \phi_5}{6.6}$

**SKEWNESS:** Inclusive graphic skewness, a measure of the symmetry of the size distribution around the mean;  $= \frac{\phi_{16} + \phi_{84} - 2\phi_{50}}{2(\phi_{84} - \phi_{16})} + \frac{\phi_5 + \phi_{95} - 2\phi_{50}}{2(\phi_{95} - \phi_5)}$

This is a pure number, positive indicates a fine-skewed distribution. All of the phi percentiles (i.e.  $\phi_{50}$ ) are read from the cumulative weight percent graphs in the Appendix.

Figure 8: Size characteristics of alluvial sediments, Hale Island, Mile 563.

the building of the Lock and Dam, Hale Island may have been an actively-growing natural levee composed of medium to fine sand. Its present veneer of silt indicates that sand deposition has ceased. This analysis suggests, but certainly does not prove, that the silt veneer has been deposited since the building of the Lock and Dam.

Large areas of bottomland, particularly at the lower end of the Pool, have been inundated by construction of the Lock and Dam. Moreover, the water in these submerged backwater areas moves very slowly and is capable of transporting only fine sediment, and clay, not sand. This is probably the case at the flood stages as well as at low water stages. Thus it seems quite possible that the silt overlying the medium to fine sand at sites 9 and 10 has been deposited since construction of the Lock and Dam. If so, its thickness should be greatest at the lower end of the Pool and become progressively thinner upstream. Further investigation will be required to test this hypothesis.

U.S. Standard Sieve Mesh #	Millimeters (1 Kilometer)	Microns	Phi(φ)	Wentworth Size Class
	4096		-20	
	1024		-12	
	256		-10	Boulder (-8 to -120)
Use	64		-8	Boulder (-8 to -120)
Wire	16		-6	Cobble (-6 to -80)
Squares	4		-4	Pebble (-2 to -60)
5	3.36		-2	
6	2.83		-1.75	
7	2.38		-1.5	Granule
8	2.00		-1.25	
10	1.68		-1.0	
12	1.41		-0.75	
14	1.19		-0.5	Very coarse sand
16	1.00		-0.25	
18	0.84		0.0	
20	0.71		0.25	
25	0.59		0.5	Coarse sand
30	0.50	500	0.75	
35	0.42	420	1.0	
40	0.35	350	1.25	
45	0.30	300	1.5	Medium sand
50	0.25	250	1.75	
60	0.210	210	2.0	
70	0.177	177	2.25	
80	0.149	149	2.5	Fine sand
100	0.125	125	2.75	
120	0.105	105	3.0	
140	0.088	88	3.25	
170	0.074	74	3.5	Very fine sand
200	0.0625	62.5	3.75	
230	0.053	53	4.0	
270	0.044	44	4.25	
325	0.037	37	4.5	Coarse silt
	0.031	31	4.75	
	0.031	31	5.0	
Analyzed	0.0156	15.6	5.0	
	0.0078	7.8	6.0	Medium silt
	0.0039	3.9	7.0	Fine silt
by	0.0020	2.0	8.0	Very fine silt
	0.00098	0.98	9.0	
Pipette	0.00049	0.49	10.0	Clay
	0.00024	0.24	11.0	(Some use 20 or
or	0.00012	0.12	12.0	90 as the clay
	0.00006	0.06	13.0	boundary)
			14.0	
Hydrometer				

TABLE 2. Grain size scales for sediments (Folk, 1974)

## SURVEY METHODS

Initial response to the U.S. Army Corps of Engineers proposal for the survey of Pool 12 included plans to implement a sampling strategy based upon geomorphological categories which may indicate prehistoric land surfaces. Survey methodologies were proposed to include shovel testing and soil coring on island interiors, and pedestrian surface collection along exposed shorelines. Pre-survey inspection of the floodplain with the aid of geomorphologists Dr. Richard Anderson of Augustana College and Dr. James Knox of the University of Wisconsin suggested that floodplain land forms have been subjected to varying degrees of historic modification including sedimentation and erosion. These processes have been accelerated from historic land use modification in the river basin, navigation, and management of the pool water levels.

As noted earlier, increased sediment load in the basin has resulted from agricultural and other land clearing practices within the overall drainage. This increased turbidity has caused higher sedimentation rates in slower current areas such as back water sloughs and bay areas of lakes and ponds (Figure 9). In addition, in faster moving water, the sediment particles add to the scouring affect of the current. This is occurring along the main channel and many of the side channels. Islands surrounded by the main channel and side channels exhibit both sedimentation and erosion. The upper ends of these insular units, in most cases, are being severely eroded, illustrated by high vertical banks. In the profiles of these exposures, recent alluvial deposition was observed as loose sand at the uppermost levels. The lower ends of the islands typically consist of recent sand bar formations.

Erosion along the main channel, side channels and larger back water lake shores is aggravated by boat wakes and waves (Figure 10). Barge navigation creates the most significant wakes in the main channel. In the side channels and back water lakes erosional wakes are a consequence of recreational boaters. Natural waves have a similar effect as boat wakes, and are most severe in wider open water bodies such as the main channel and larger back water lakes.



Figure 9: Sedimentation in slower current areas, e.g.,  
sloughs and backwater lakes.



Figure 10: Shoreline erosion.



While boat wakes and natural waves are presently increasing the rate of shoreline erosion, these agents are destructive impacts primarily because of the loss of protective vegetation, a result of changes in pool water levels (Stoltman and Theler 1980), Boszhardt 1982, Gramann, 1981:10-11). Pool maintenance has apparently created a situation where the water levels change to such intense degrees and at such irregular intervals, that floral species are unable to adapt, and die off leaving exposed soil. Once this occurs, current scouring, boat wake and natural wave action begin to remove soil deposits eventually resulting in cut bank erosional faces.

During the geomorphological inspection of the lowland floodplain, recognition of prehistoric land surfaces was not possible from observations of exsisting land forms. It was concurred that dateable indicators such as cultural materials were needed to identify such surfaces. Evidence from lowland floodplain sites in Pool 10 has demonstrated that prehistoric deposits are often buried between .5 and 2 meters below modern surfaces (Stoltman and Theler 1980, Boszhardt 1982).

Brown has addressed problems involved with attempting to sample deeply buried and stratified deposits (1979). Brown states: "Sampling within buried occupational layers (or strata) in a stratified site is clearly a different problem than sampling over an exposed surface. All probabilistic sampling procedures assume that the total surface of the site is equally accessible. But superposition of sample populations imposes difficulties that rule out probabilistic sampling procedure in any realistic research design (1979:163-64)". Although his discussion is placed in the context of a single site, the problems are similar for survey sampling strategies in geomorphological situations such as the lowland floodplain. Brown goes on to offer a multistage procedure for which comparable samples from stratified layers may be obtained, however, the first step in such a procedure involves "the collecting of information relevant to the number and distribution of subsurface archaeological zones. This is the information that would be recoverable prior to excavation from such opportunistically available sources as erosional cuts,

topographic/geomorphic information, and intentional sources such as coring" (1979:165).

As noted earlier, no geological or archaeological studies had been previously undertaken of the lowland floodplain deposits near Pool 12. Therefore, survey strategy of the lowland floodplain in Pool 12 shifted to the collection of the type of information suggested by Brown as necessary for further sampling.

The methods employed were primarily visual inspection of cut bank faces and surface collection of shorelines during periods of low water. Shovel testing survey techniques were considered inappropriate due to the potential depths of cultural deposits as suggested from the archaeological investigations in Pool 10. In addition, soil corings were made at a variety of locations for the purpose of providing data on alluvial deposition.

Surface collection of cut bank areas presents a limitation in that only eroding shorelines are surveyable. The resultant site distribution identified by such a survey is therefore biased, and may not accurately reflect prehistoric utilization of the lowland floodplain.

Shoreline survey is productive during periods of low water when the entire vertical faces of eroding banks are exposed, and cultural materials may be redeposited on temporary beaches (Figure 11). It is assumed that materials recovered from these redeposited contexts represent a close approximation of the original horizontal proveniences of their prehistoric deposition. Unfortunately vertical control is usually not possible. Collection of redeposited materials from beaches presents problems of possible mixed assemblages at multicomponent sites. Diagnostic artifacts, when present, can be used to identify prehistoric components, however, undiagnostic materials, (e.g. cores, bifaces, scrapers, flakes, bone, underdecorated ceramic sherds, etc.) cannot be affiliated to a particular component when two or more components are indicated from the diagnostics at a site.

In addition, the redeposited materials do not allow documentation of the depth of the cultural levels. During examination of exposed bank faces, materials were observed



Figure 11: Temporary beach at low water.

in situ, and the depth of a cultural horizon was recorded. However, unless these materials were diagnostic, those deposits cannot be affiliated to a particular component.

During much of the summer of 1981 the water in Pool 12 remained at relatively high levels. Initial floodplain survey with the pool levels above 9.0' (as measured at Dubuque, Iowa) proved frustrating in that very few areas of foreshore beneath eroding banks were exposed, and no prehistoric sites were located. While waiting for the water level to drop, efforts were spent surveying the higher, privately owned, Pleistocene outwash deposits along the margin of the lowland floodplain. Land use conditions on the terraces determined survey methods. For example, cultivated fields and other disturbed surfaces were visually inspected using pedestrian survey techniques. Residential areas were surveyed by interviewing land owners.

## PREVIOUS INVESTIGATIONS

Site record checks at the Museum of Anthropology of the State Historical Society of Wisconsin (SHSW), the Office of the State Archaeologist of Iowa, and the Illinois Archaeological Survey were made prior to actual field work. These investigations revealed numerous previously reported sites along the margins of Pool 12, but none within the lowland floodplain. The distribution of these sites is included on Figure 1. The following reconstruction of the history of cultural resource investigations which led to the reporting of these sites is incomplete due to the restricted access to records from each of the states involved.

Some of the earliest archaeological investigations reported in the Pool 12 area are mound explorations. As early as 1835, and again in the 1870's, mounds in the Portage Group near the mouth of the Galena River were excavated by local residents. (History of Jo Daviess County 1878:227, 844). In the late 1800's many mound groups were investigated in the Upper Mississippi River Valley by agents of Cyrus Thomas, although none of the explorations appear to have included mounds immediately along the margins of Pool 12. (Thomas 1884, 1891).

At the turn of the century William B. Nickerson, as a private citizen conducted extensive investigations of mounds and villages along the Illinois bluff line. A portion of Nickerson's work is reported by Bennett in his classic book on the archaeology of Jo Daviess County (1945). Included in Bennett's report is additional work and re-investigation of some of Nickerson's explorations by the University of Chicago in the mid-1920's.

Along the stretch of River since designated Pool 12, Bennett reports several mound groups on the bluff tops, and a few habitation sites located at the base of the bluffs on the edge of the lowland floodplain, beginning just north of the mouth of the Galena River and south to the vicinity of the small town of Aiken. Mound excavations, including re-excavation of the mounds in the Portage Group, revealed several Middle Woodland conical

tumuli with Hopewellian affinities, and Late Woodland types including linears and a few effigies. Habitation sites produced a few Middle Woodland diagnostics, however, the predominant component suggested is Late Woodland. It is of interest to read that materials at several of the low lying habitation sites were buried under several feet of alluvium.

To the south of what is now Pool 12, Bennett also described a mixed Mississippian and Woodland complex which he defined as the Apple River Focus. No such components have yet been identified from the Pool 12 area with the exception of stone box graves on the Portage Ridge (Bennett 1945:127-131).

In the 1930's Ellison Orr produced several manuscripts reporting on investigations throughout Iowa. In Volume II, nd (a), III, nd (b), and VIII, nd (c), he describes three mound groups (13Jk9, 10 and 11) on the bluff tops adjacent to the Mississippi River along Pool 12.

Dr. Charles R. Keyes was involved in Iowa archaeological research from the 1930's to the 1950's. He also recorded information on 13Jk11, and reported a Woodland village (13Jk6) from the high Pleistocene terrace to the north of Bellevue.

During the 1950's, Wilfred Logan conducted research in northeastern Iowa and adjacent states providing one of the more comprehensive reports (published in 1976) on Woodland sites in this area. Based on descriptions of mound, open air habitation and rock shelter sites, Logan established a regional artifact chronology. This chronology has been recently revised by Benn (1979 and 1980) and Stoltman (1979). Pool 12 is at the southern end of the area considered by Logan. Logan includes descriptions of only one site from the Pool's margins (13Jk11). Basing his discussion on Orr's excavations Logan attributed the mounds in this group to have Hopewellian and late Middle Woodland (Weaver) components (1976:12, 122, 147 and 158). He also reports on the Pleasant Creek Mound Group located a few miles below Lock and Dam No. 12, which consisted of Mounds with Hopewellian and probable late Middle Woodland affinities (1976: 12-17, 147-148, and 158).

In the 1970's archaeological investigations continued on both sides of Pool 12. Beginning early in the decade, the University of Wisconsin-Milwaukee became involved in the Illinois Historic Sites Survey Program and concentrated their efforts in the northwestern Illinois region from the Rock River to the Wisconsin State line. Several preliminary reports resulted from these efforts including Fowler and Gregg (1972), Fowler and Dudzik (1974)(1975), Dudzik (1974a), and Benchley et al (1981). These reports are generalized in nature and do not provide specific site data. It is not known how many, if any, sites along Pool 12 are included in the presented data.

U.W.-Milwaukee also conducted investigations in the area under a contract program initiated in 1974. While none of these investigations deal with sites directly adjacent to the Pool 12 segment of the Mississippi River, several reports describe the results of surveys and excavations at sites along the river between Jo Daviess County and the mouth of the Rock River. (e.g. Dudzik 1974(b), Fowler and Dudzik n.d., Gregg 1975, Benchley and Dudzik 1976, Benchley, Gregg and Dudzik 1977, Benchley and Dudzik 1978, and Benchley, Hassen and Billeck 1979). The Benchley, Gregg and Dudzik (1977) report complements an earlier study of investigations at the Albany Mounds site (Herold 1971).

Archaeological sites were reported on the Iowa side of Pool 12 in the 1970's. In 1973 Dean Straffin reported sites 13Db10-15 and 13Db17-18. These include mound groups on the bluff tops and habitation sites at the mouth of Catfish Creek. Anton Till (1977) later reported sites 13Db20-22 and 13Db44-47 along the Iowa side of Pool 12. These sites also include mound and habitation sites on the bluffs and alluvial terraces bordering the river. 13Db22 is particularly interesting in that it is the southern most effigy mound reported on the Iowa side of the Mississippi River.

The only sites located along the small segment of Pool 12 which borders Wisconsin were reported in the 1970's. In the results of the survey along the Mississippi shore, Geier and Loftus (1975) reported a series of sites (47GT184-190) just to the north of Lock and Dam No. 11. These included habitation

sites on a Pleistocene terrace along the river and mounds on the bluff tops. Surface collections from the terrace habitation sites yielded diagnostic materials suggesting at least Early/Middle Woodland to Late Woodland occupations.

In 1980, the Department of Transportation for the State of Wisconsin in cooperation with the Museum of Archaeology at the SHSW conducted salvage excavations at two newly reported bluff top mound groups (47Gt365 and 366). These sites were threatened by the construction of a new bridge between Wisconsin and Dubuque, Iowa. These groups consisted of relatively small conical and linear mounds. Analysis of materials recovered during excavation is on-going, thus no report is as yet available. However, preliminary indications are that these groups were affiliated to the Late Woodland Period (John Penman personal communication). During the period of excavation, a short time was expended in surveying nearby bluff tops and ravines. These brief explorations resulted in the location and reporting of several additional mound groups (47Gt367-371).

A recent overview of the cultural resources in the Upper Mississippi River area briefly lists most of the sites mentioned above (Petersen 1978). This report provides a readily accessible source for initial comprehension of the previously reported archaeological sites in the Pool 12 vicinity.



## RESULTS OF SURVEY

Survey of the Pleistocene outwash deposits recovered materials from eight prehistoric sites. One of these sites (11Jd86) had been previously reported. After the pool water level dropped to below 9.0', and shoreline survey of the floodplain resumed, fifteen prehistoric sites were located on RID-CCE land. All floodplain sites were located in the upper half of the pool suggestively above the "hingeline" proposed by Eichhorne (1981:3). A hingeline represents the location in each pool where lands below have been inundated by the lock and dam pooling, and lands above remain above water approximating the pre lock and dam river conditions. Prehistoric sites in the lowland floodplain were located at eroding shorelines along the main navigation channel, side channels, and relatively large backwater lakes. No archaeological sites were identified on backwater sloughs where siltation is most dramatic. In the following site descriptions, sites will be discussed in groups by physiographic setting including Pleistocene terraces, backwater lakes, side channels, and the main channel of the river.

### PLEISTOCENE TERRACE SITES:

Diagnostic artifacts are described in detail, and previously defined type affiliations were attempted when feasible. Non-diagnostic materials are listed in tables for each site collection. These materials are separated by material and form categories. In most cases, the categories are self-explanatory. "Intentional Flakes" are considered to be byproducts of lithic reduction which exhibit one or all of the following characteristics: a striking platform, a flat ventral surface with a bulb of percussion, and either cortex or previous flake scars on the dorsal surface. The category "Shatter" contains blocky, sharp edged fragments of chert which are assumed to be unintentional byproducts of lithic reduction or burning of the parent material.

(11JD 114) Einsweillers field

The Einsweiller site is situated on a sandy rise possibly representing a Pleistocene outwash episode (elevation ca. 610) on the east side of an unnamed drainage about 500' from the opening of the bluffs to the Mississippi River trench. The rise is bordered on the north and east by bedrock hills now in pasture. The rise itself is presently the north end of a cornfield. The lower two-thirds of the field are silty bottomlands.

A single surface collection was made which recovered a substantial amount of cultural debris (see Table 3).

Unfortunately few diagnostic artifacts were recovered. The diagnostic materials that were recovered suggest a late Middle Woodland component. These consist of a single projectile point, two rim sherds and one decorated body sherd. The projectile point, (Figure 12b,f) though rather crude, appears to fit the expanded stem form similar to the Stueben type (White 1968:78-89). One rim sherd is smooth on both surfaces, and has a flattened lip (Figure 12g). This sherd is 4.5-6.5 mm thick, with some sand in the paste and fine grit temper added. In southwestern Wisconsin this would most clearly fit the type Spring Hollow Plain (Logan 1976:98).

The second rim sherd (Figure 12k) also has smooth surfaces, however, the lip is decorated with a series of linear stamps. Its paste and temper are similar to the Spring Hollow Plain rim, but this second rim is only 4-4.5 mm thick. This sherd conforms to the late Middle Woodland type Spring Hollow Plain variety Linear Stamped (Stoltman 1979:137). The single decorated body sherd has three parallel rows of fine dentate stamping on a smoothed surface (Figure 12h). The paste, temper and thickness are similar to the rim sherds. This sherd may represent a vessel of the type Levsen Stamp variety dentate stamp, also a late Middle Woodland diagnostic (Logan 1976: 93-94).

The remaining ceramic sherds are all undecorated body sherds. The paste and temper of all but one of these are similar to the diagnostic sherds described above. Thicknesses cluster between 4-7 mm, however, one sherd is only 2 mm thick, and a few range to as thick as 8mm. The thin sherd may represent a late



Figure 12: Diagnostic artifacts-Pleistocene terrace sites.

TABLE 3. (11Jd114) Surface Collection

LITHICS

Cores (4)  
Bifaces (3)  
Retouched Flakes (8)  
Points (1) (expanding Stemmed)  
Scrapers (1)  
Intentional Flakes (77)  
Shatter (25)  
Unmodified Rock (3: 1 chert chunk, 2 broken cobbles)

CERAMICS

Spring Hollow Plain (1 rim sherd)  
Spring Hollow Plain variety linear stamp (1 rim sherd)  
Levsen stamp variety dentate (1 decorated body sherd)  
Undecorated body sherds-grit tempered (26: 7 cordmarked,  
14 smooth)  
Exfoliated - grit tempered (5)

ORGANIC

Bone (1 burned)  
Shell (1 valve)

Woodland component. One sherd is tempered with limestone, with the particles having been leached out and only being represented by irregularly shaped cavities. This sherd has a smooth surface, and is 5 mm thick. It is possible that this sherd represents an earlier, Middle Woodland component.

During the course of our survey, two other collections were located from this site. A neighbor boy by the name of Chandling has collected a few artifacts from this site including one expanding stemmed point. The second collection is more extensive in quantity and information. Mr. Ray Miller has collected this site for several years, and has in his possession numerous diagnostics and other utilitarian artifacts (Figure 13). Among the diagnostics are several more expanding stemmed points. However, Mr. Miller has also collected several side-notched and straight stemmed points. The side notched points are within the range of the Late Archaic type Raddatz Side Notched (Wittry 1959 44). The straight stemmed point may represent the Krammer type (Perino, 1968:44), and probably indicates an Early Woodland component.

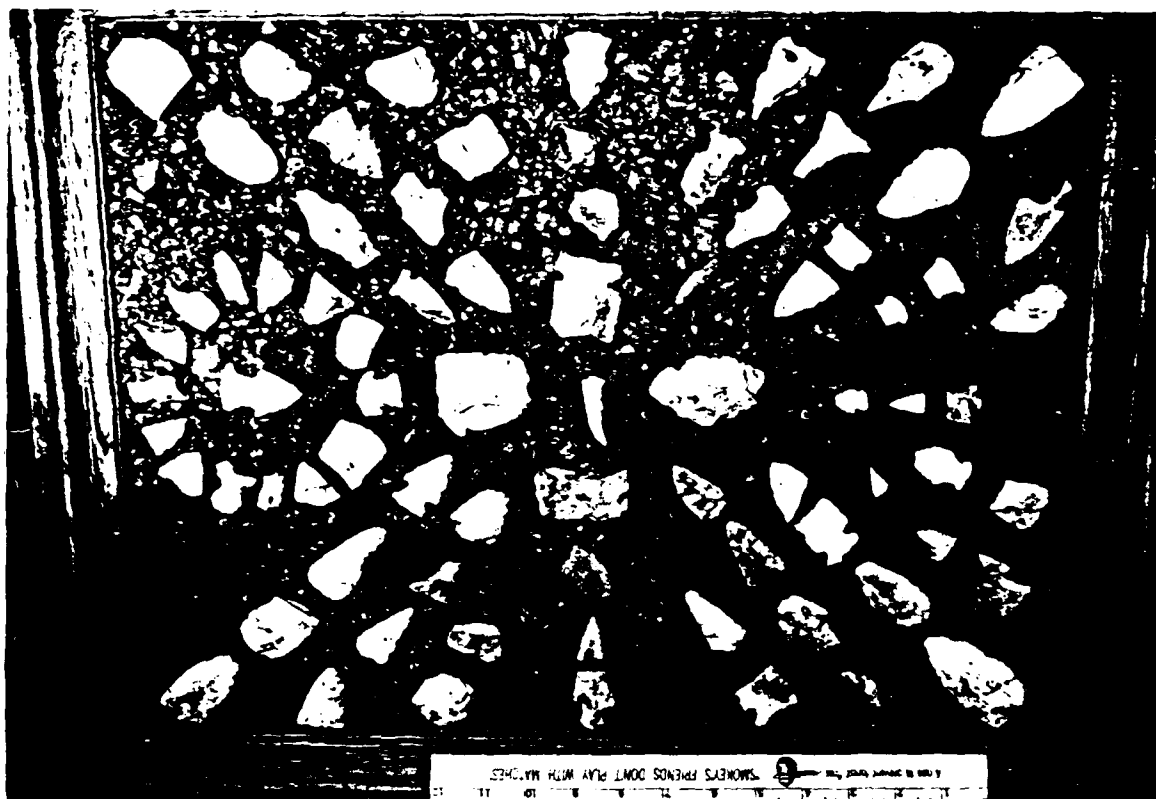


Figure 13: Ray Miller Collection-11Jd114.

13Jk77 (Gassman's Site/Spruce Creek Harbor)

A portion of this site was located on a Pleistocene outwash terrace (elevation 615') on the south side of Spruce Creek Park. The Spruce Creek drainage forms the north edge of the Pleistocene outwash deposits. Between the Pleistocene terrace and the flat bottoms of the Spruce Creek, there is a lower terrace (elevation ca. 600'). The lower terrace rises only a few feet above the present surface of the Spruce Creek Bottoms, and much of it has been dredged away to form the Spruce Creek Harbor. The lower terrace forms the second portion of this site.

Materials were collected from the top of the slumping Pleistocene terrace edge and from the beach below and in front of Gassman's Marina (= Area A). The area collected in Area A is about 75 meters from Gassman's north to the mouth of Spruce Creek Harbor. It is probable that the site continues to the south along the Pleistocene terrace. It is not known to what extent the site continues inland. The Pleistocene terrace top is developed with numerous residences, the marina, and a trailer park. Site disturbance to Area A has undoubtedly occurred from the building of the residences. It is not known if the area was cultivated prior to the more recent development. Less disturbed portions of the site in Area A are very likely preserved in the yards of residences.

Only lithic artifacts were recovered from Area A. These are listed in Table 4. The only diagnostic artifact recovered is a contracting stemmed point (Figure 12d) which was found in redeposited contexts on the beach below the marina. Contracting Stemmed points have been found in Early-Middle Woodland contexts at other sites in the Upper Midwest (White 1968:178).

This portion of the site is not being affected by river action as much as lower floodplain sites. The erosion on the slumping edge of the Pleistocene terrace is moderate.

Area B has been badly disturbed from the dredging of Spruce Creek Harbor which has removed much of the lower terrace to the south of Spruce Creek. Small areas of the terrace edge remain between the Harbor and the mouth of Spruce Creek. Materials were

recovered from the small portion of this terrace which remains between the harbor and the creek, in eroded areas adjacent to the Mississippi River (Bellevue Slough). It is uncertain whether this portion of the site has been covered with dredge spoil from the harbor.

Materials collected from area B include a single incised over cord marked body sherd, several lithic pieces and a fragment of burned bone (see Table 4). The incised over cord marked sherd is tempered with sand and crushed rock. This sherd is 10 mm thick and the incised lines are perpendicular to the apparently vertical cord markings. The decorative motif of incising over a cord marked surface is commonly interpreted as representing a late Early Woodland (Black Sand) component. (Griffin 1952:98-99). However, there is evidence from the Upper Midwest which indicates that this style of decoration persists into Middle Woodland cultural affiliations (Masons 1966, Boszhardt 1982).

#### Bellevue Sand and Gravel (13Jk75)

This site lies on a higher Pleistocene outwash terrace. At this location the surface elevation is 640'. This area is badly disturbed from active sand and gravel quarrying. This is near 13Jk6, the Bellevue Dunes Site. 13Jk6 was reported by Keyes as a Woodland Village on the bank of the Mississippi River just north of a gravel pit..., ca. 2 miles north of Bellevue.

Prehistoric materials were recovered in 1981 from an area where loose sand is slumping to the river on the outer rim of an active gravel pit. It is probable that materials continue to the north, south and west from this location. Only lithics were recovered. These materials are listed in Table 5. No diagnostic materials were found.



TABLE 4. (13Jk77) Surface Collection (Area A)

LITHICS

Retouched Flakes (5)  
Intentional Flakes (25)  
Shatter (7)  
Points (1 contracting Stem)  
Miscellaneous (1 possible hammerstone spall-Basalt)  
Unmodified Rock (6: 3 pebbles, 3 chert)

(13Jk77) Surface Collection (Area B)

LITHICS

Intentional Flakes (2)  
Shatter (1)  
Fire-cracked Rock (1 limestone)

CERAMIC

Incised over cord marked (1 sand and grit tempered body sherd)

ORGANIC

Burned Bone (1)

TABLE 5 (13Jk75) Surface Collections

LITHICS

Cores (1) (fragment)  
Bifaces (1)  
Retouched Flakes (4)  
Intentional Flakes (71)  
Shatter (12)  
Unmodified Rock (1 cobble)

Blandings Landing 11Jd113

At the southern end of Pool 12 the river trench between the bedrock bluffs widen rather abruptly. Corresponding to the wider trench, and especially on the Illinois side, is an expansive plain of sandy glacial outwash. Lock and Dam (No.12) is situated at the northern end of these deposits with much of the land owned by U.S. Army Savanna Depot. At the very northwest end of the Pleistocene deposits, and adjacent to the north end of the Savanna Army Depot, is the Blanding Landing Campground. 11Jd113 was found at this campground.

The Blanding Landing Campground is bordered on the west by the Mississippi River, and to the east by the Chicago, Burlington and Quincy R.R. tracks. The campground slopes gently to the river, and to the R.R. tracks having the appearance of a linear rise (elevated 615'). This rise continues to the north a short distance and to the southeast onto Army Depot land, and may represent a former sandbar. It is also possible that the linear nature of the rise is artificial, with the east side slope caused by trenching for the R.R..

The campground is presently covered by grass with trees lining gravel roadways and the shoreline. However, the loose sandy soil leaves some open areas where surface collection is possible. Prehistoric materials were collected from these areas for the length of the campground. The artifacts recovered are listed in Table 6. These are restricted to lithic materials. A single possible contracting stemmed point is the only semi-diagnostic artifact recovered (Figure 12e). This point, if it actually does represent the contracting stemmed form, may represent a component from the Early through Middle Woodland Periods (White 1968: 178).

Local informants stated that this area was formerly plowed, and that arrowheads were collected each year. Unfortunately, these collections have either been given away or sold. Presently the campground is in a state of semi-stability. Gravel road ways are in place, and pit toilets have been installed. Shoreline erosion is minimal, however, the loose soil, compounded by camping activity, is resulting in site disturbance. It is not known if in-situ features remain in the campground.

The distribution of materials for the length of the campground suggests that the site continues to the north and south. If it does continue to the south onto the Army Depot lands, that portion of the site may be less disturbed. Also, if the eastern boundary (the R.R. tracks) is artificial, the site may continue in that direction where a trailer park now occupies much of the remainder of the sandy plain to the bluffs.

Dubuque Sand and Gravel 11Jd115

This site was located while inspecting the walls of a large sand and gravel pit from which were quarried the deposits of a Pleistocene outwash terrace (elevation 615'). The terrace is located on the west side of the entrance of the Menominee River to the Mississippi River bottomlands, and forms the northeast side of Frenress Lake. The Dubuque Sand and Gravel Company owns the southeast end of the terrace between Frenress Lake and the Menominee River. The terrace section where the gravel pits are located does not actually border a present water body. Two large quarry pits are located to the south of the company office building. The western pit is currently being mined. The eastern pit is abandoned, having filled with water. It is at the latter of these pits that 11Jd115 was found.

Materials were recovered from the edge and on the sloping banks of the water filled pit at its eastern end. This end of the pit forms a corner of the southern and northeastern walls. Materials were collected from the east 1/2 of the southern wall and around the edge of the northeast wall for a distance of ca. 40 meters. The southern wall of the pit is a linear strip which separates the pit from the terrace edge overlooking the Menominee River delta, and a proposed barge terminal. A pipeline had been laid in this strip protecting it from quarrying. The strip is ca. 30 meters wide. The northeast wall is parrallel to the Illinois Central R.R. tracks at a distance of about 40 meters. The tracks in this area are laid in a trench which cut into the terrace. A gravel road from the quarrying operations occupies the land between the tracks and the northeast wall of the pit.

Obviously, some portion of the site has been lost due to quarrying. It is likely that some areas of the site remain in relatively undisturbed condition along the non-quarried strips along the southern and northern walls of the pit.

The artifacts recovered indicate a long series of prehistoric occupancy. Several projectile points and ceramic sherds are diagnostic of components ranging from the Late Archaic through Late Woodland Periods. Two side-notched projectile points (Figure 12a,b) appear to fit the Late Archaic type Raddatz side-notched (Wittry 1959:44). One straight stemmed point (Figure 12c) might be classified as Kramer/Liverpool stemmed which should indicate an Early Woodland component (Perino 1968:44). A single limestone tempered sherd may represent a Middle Woodland occupancy. Unfortunately this sherd is an undecorated body sherd, however, limestone tempering is often considered a Middle Woodland ceramic attribute (Griffin 1952:115). A final diagnostic artifact is a small rim sherd apparently having smooth exterior and interior surfaces, but with cord impressions notching the lip (Figure 12j). Cord impressing as a decoration is generally affiliated with Late Woodland ceramics, however, the smooth surfaces might argue for a transitional late Middle Woodland to Late Woodland type such as Lane Farm Cord Impressed (Logan 1976, Benn 1976 and Stoltman 1979).

Unfortunately, none of the diagnostic artifacts were collected from in-situ contexts which might indicate possible stratigraphic relationships. A further disappointment was not noticing any features in the exposed walls of the gravel pit. However, late in the summer, Mr. Ray Miller recovered a concentration of bone, pottery, and fire-cracked rock from a stained area in the gravel pit wall. The concentration probably represents a pit feature. A sample of the materials Mr. Miller recovered from this probable feature are shown in Figure 14. These include one grit tempered collared rim sherd, one castellated and cord impressed rim sherd and a small corner notched projectile point. These artifacts indicate a Late Woodland affiliation of the feature. The castellated rim sherd is an example of the Late Woodland Maples Mills type (Fowler 1952).

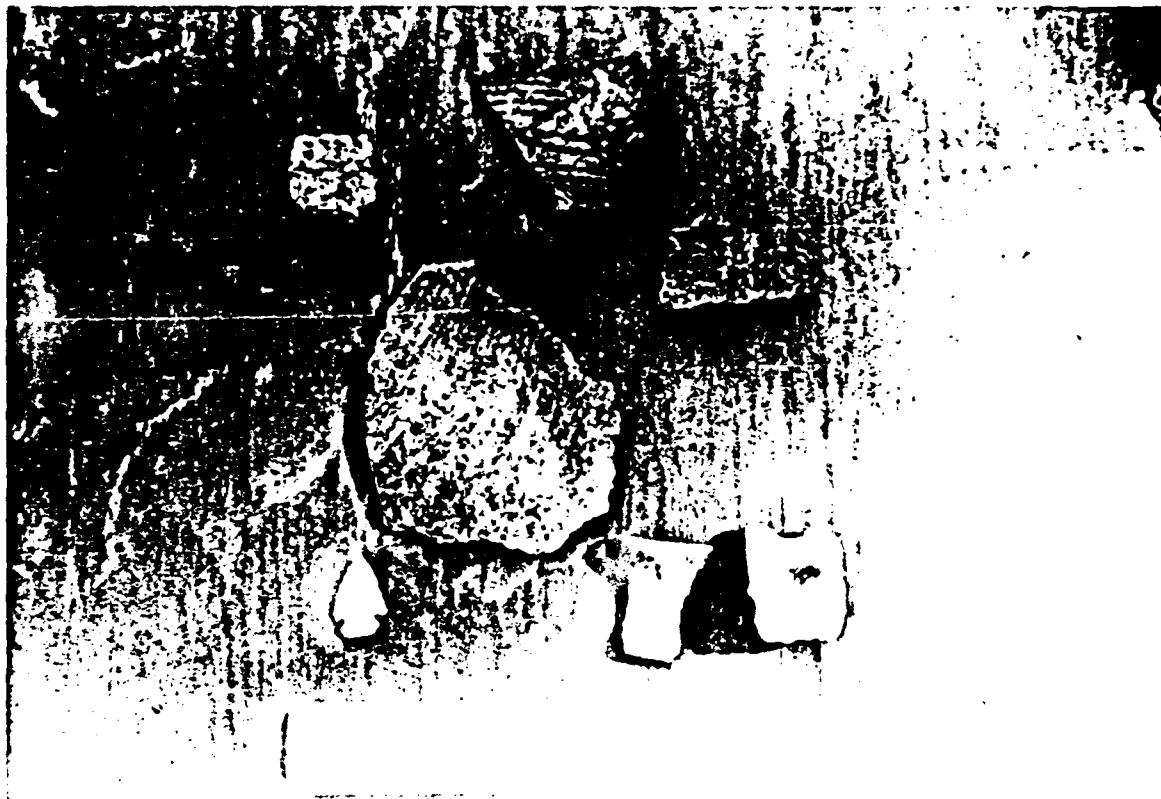


Figure 14: Ray Miller collection-11Jd115.

TABLE 6 (11Jd113) Surface Collection

LITHICS

Cores (2)  
Bifaces (7)  
Retouched Flakes (31)  
Intentional Flakes (180)  
Shatter (157)  
Points (3 fragments, 1 possible contracting stem)  
Scrapers (8)  
Fire-cracked Rock (2 limestone)  
Miscellaneous (2: 1 broken granite, 1 broken basalt)

ORGANIC

Burned Bone (1)  
Unburned Bone (8)

TABLE 7 (11Jd115) Surface Collection

LITHICS

Cores (7)  
Bifaces (4)  
Retouched Flakes (6)  
Intentional Flakes (129)  
Points (3: 1 straight stem, 2 side notched)  
Fire-cracked Rock (1 limestone)  
Unmodified Rock (6 chert cobbles)

CERAMICS

Cord Impressed Rim, smoothed surface (1)  
Undecorated Body Sherds - grit tempered (17: 15 smoothed  
over cord marked, 2 smoothed)  
Undecorated Body Sherds - Limestone tempered (1 smooth  
surface)  
Exfoliated - grit tempered (4)  
Untempered burned clay (2)



Site 7 (11Jdl38) Frentress Lake Northeast Shore

The northeast shore of Frentress Lake represents the edge of a pleistocene outwash terrace (Elevation 610-615'). 11Jdl15 is located on the southwest end of this terrace. Houses, cottages and a marina line the lake shore along the top edge of this terrace. The shore varies in stability depending on the amount of artificial protection provided by the various occupants.

However, in most cases some amount of exposure due to wave erosion or bank slumpage from human activity is evident. Surface collection combined with land owner interview were employed in survey of this area. Materials were recovered from nearly the entire length of this shore. At one point about halfway along the residential shore a well developed ravine occurs naturally dividing the terrace edge. Materials were collected and catalogued separately from the east and west sides of the ravine. A short distance to the west of the ravine, the terrace edge slopes more gradually to the water and forms a low flat. Materials from this flat were also kept separate. In addition, a hayfield located ca. 75 meters from the shore on the terrace was also collected. This field had been recently cut, and in certain areas loose sandy soil conforming to two linear rises made collection feasible. The materials recovered in this field were also kept under separate provenience. Table 8 lists the materials recovered from each of these general proveniences.

Our collection recovered only one diagnostic artifact. A broken triangular projectile point (Figure 12k) was recovered from the low flat to the west of the ravine. Triangular points are traditionally affiliated with the Late Woodland period. To the southeast of the ravine a possible base of a contracting stemmed point was recovered. If this base does represent a contracting stemmed point, it suggests an earlier component sometime between the Early-Middle Woodland Periods.

Two residents were contacted who had collected artifacts from their properties. A bifurcated point was collected from the Polfer property, just west of the ravine, and is in the possession of the Polfer's granddaughter (Ganserman) who also lives on the

Frentress Lake Shore. We were shown the location from which the point had been found, and we picked up from the same area, several pottery sherds. The bifurcated point (Figure 15) may be assigned to a Middle-Late Archaic component (Fitting 1964, Munson and Downs 1966).

Mr. Ed Staheli who lives a short distance to the east of the ravine has collected several artifacts from his property. In his collection (Figure 16) are several Late Archaic side notched points, small triangular Late Woodland points, and a few side notched triangular points which may be indicative of either Late Woodland or Mississippian components.

The boundaries of this site are difficult to ascertain due to historic developments, and the incomplete survey of the terrace. Materials seemed to concentrate towards the ravine at the shoreline. Recovery of materials at the north end of the Bonnett hayfield indicate the site continues at least 100 meters from the shore, at least on the slight sandy rises. The northern end of the lake shore where the marina, boat dock are was not surveyed. Materials were collected from the east end of the marina to the eastern end of the lake. It is not known if the scatter would continue to 11Jd113. Historically much of this terrace had been cultivated, and portions still are. Disturbances along the shore, where it is likely the site is most dense, have occurred with the construction of the numerous residences. Presently, erosion along the shore is continually claiming a portion of the terrace and site. Still, it is certain that some portion of the site remains in the yard areas of the residences.

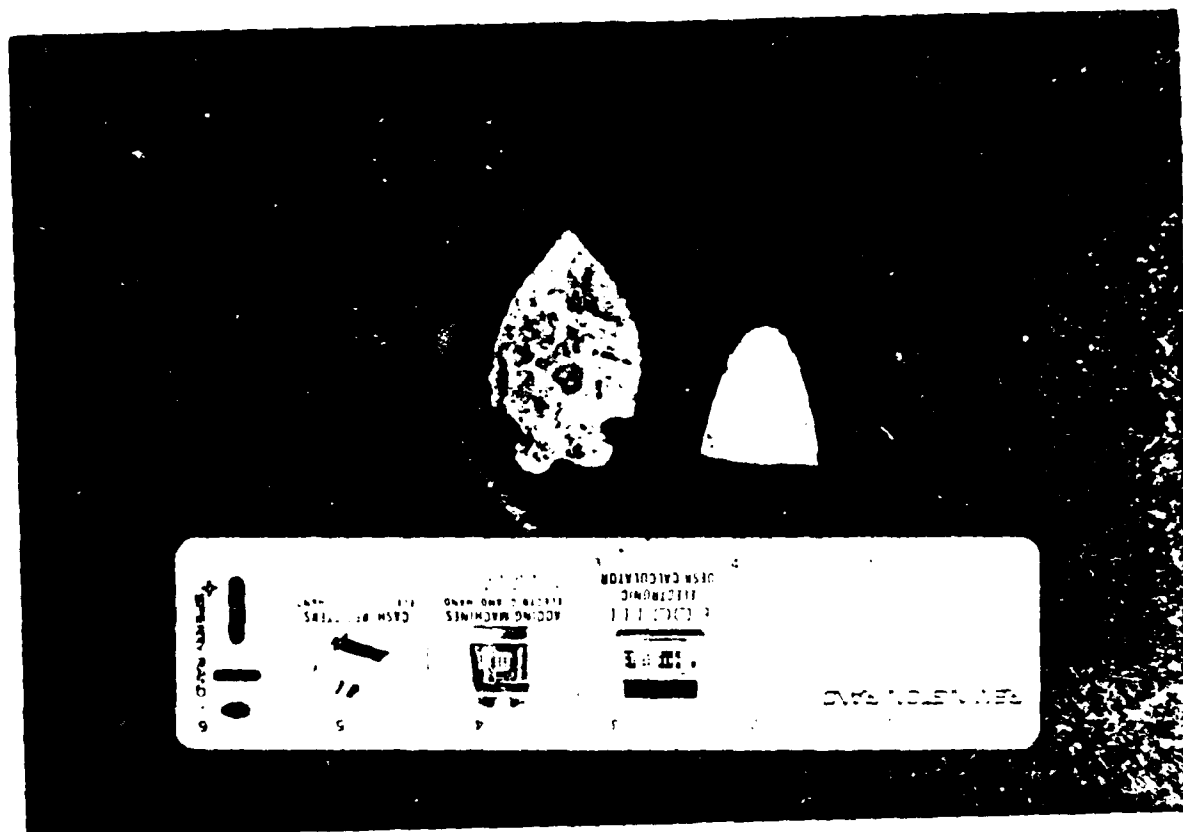


Figure 15: Ganserman Collection-11Jd138

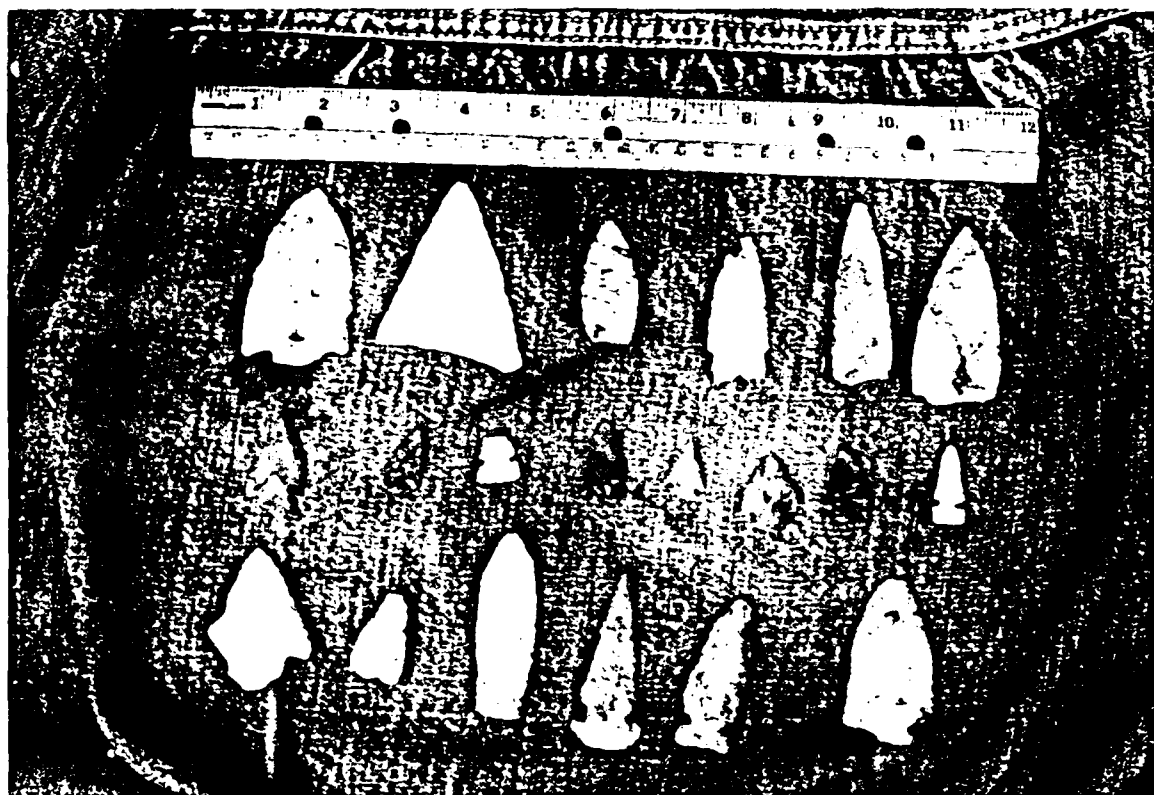


Figure 16: Staheli Collection-11Jd138

TABLE 8 (11Jd138) Surface Collection (General surface east end)

LITHICS

Cores (1)  
Intentional Flakes (36)  
Shatter (5)  
Points (1 possible base of contracting stem)  
Miscellaneous (1 slate fragment)  
Unmodified Rock (1 chert cobble)

CERAMICS

Undecorated Body Sherds - grit tempered (1 cord marked)

(11Jd138) Surface Collection (Staehli Property)

LITHICS

Intentional Flakes (44)  
Shatter (4)  
Unmodified Rock (1 granite pebble)

(11Jd138) Surface Collection (General surface west end)

LITHICS

Cores (1)  
Bifaces (1 fragment)  
Retouched Flakes (3)  
Intentional Flakes (63)  
Shatter (13)  
Unmodified Rock (2 chert fragments)

CERAMICS

Undecorated Body Sherds - grit tempered (1 smoothed over  
cord marked surface)

(11Jd138) Surface Collection (Polfer Property)

LITHICS

Intentional Flakes (9)

CERAMICS

Undecorated Body Sherds - grit tempered (4: 2 cord marked,  
2 smoothed)

(11Jd138) Surface Collection (Low terrace west of Polfer property)

LITHICS

Bifaces (1 fragment)  
Intentional Flakes (13)  
Points (1 triangular)  
Knives (1)

Table8 - Page 2

(11Jd138) Surface Collection (Bonnett Field Rise A)

LITHICS

Retouched Flakes (2)  
Intentional Flakes (38)

CERAMICS

Undecorated Body Sherds - grit tempered (1 cord marked)

ORGANIC

Unburned Bone (5)

HISTORIC

Metal (1 tobacco tin lid)

(11Jd138) Surface Collection (Bonnett Field Rise B)

LITHICS

Intentional Flakes (4)  
Points (1 fragment)

Massey Station 13DB59

Located on the east side of Nine Mile Island, and at the base of the Iowa bluffs, there are two high and narrow Pleistocene outwash terraces (elevation 640'). The northern of the terraces is known as Shawondasse, the southern as Massey. These terraces are densely occupied with homes. Survey was conducted here after local informants mentioned that prehistoric finds had been made during construction of the residences. The methods used involved door-to-door interview of local residences, and a minor amount of surface collection.

During the survey at Shawondasse, none of the residents were found to be at home. No prehistoric materials were recovered during inspection of the small amount of exposed areas. However, Mr. Louise Harley who manages the Massey Marina stated that about 9 burials had been uncovered while digging the foundation of a home at Shawondasse numerous years ago. This home is now occupied by Mr and Mrs. Post.

Resident interviews at Massey proved more fruitful. The occupants of two houses had found prehistoric artifacts in their yards. Mr. Jim Kalmeth who lives in the second house north of the Massey Tavern had recently found a Durst Stemmed point digging along the east side of his house (Figure 17). Inspection of the dugout area revealed no additional artifact materials. The soils appeared to be pure sand to a depth of ca. one meter. Mr. and Mrs. Ed Gaharty, who occupy the third house south of Marina Road, also have a collection of prehistoric materials. Although many of the Gaharty's artifacts are not from this region, Mr. Gaharty was able to distinguish at least one contracting stemmed point and an expanding stemmed point, which he was positive had been found at Massey.

Although none of the other residents contacted had found artifactual materials, surface collection of a dirt driveway leading to the fourth and fifth houses southeast of the Gaharty's resulted in the recovery of one retouched flake and eight unretouched flakes.

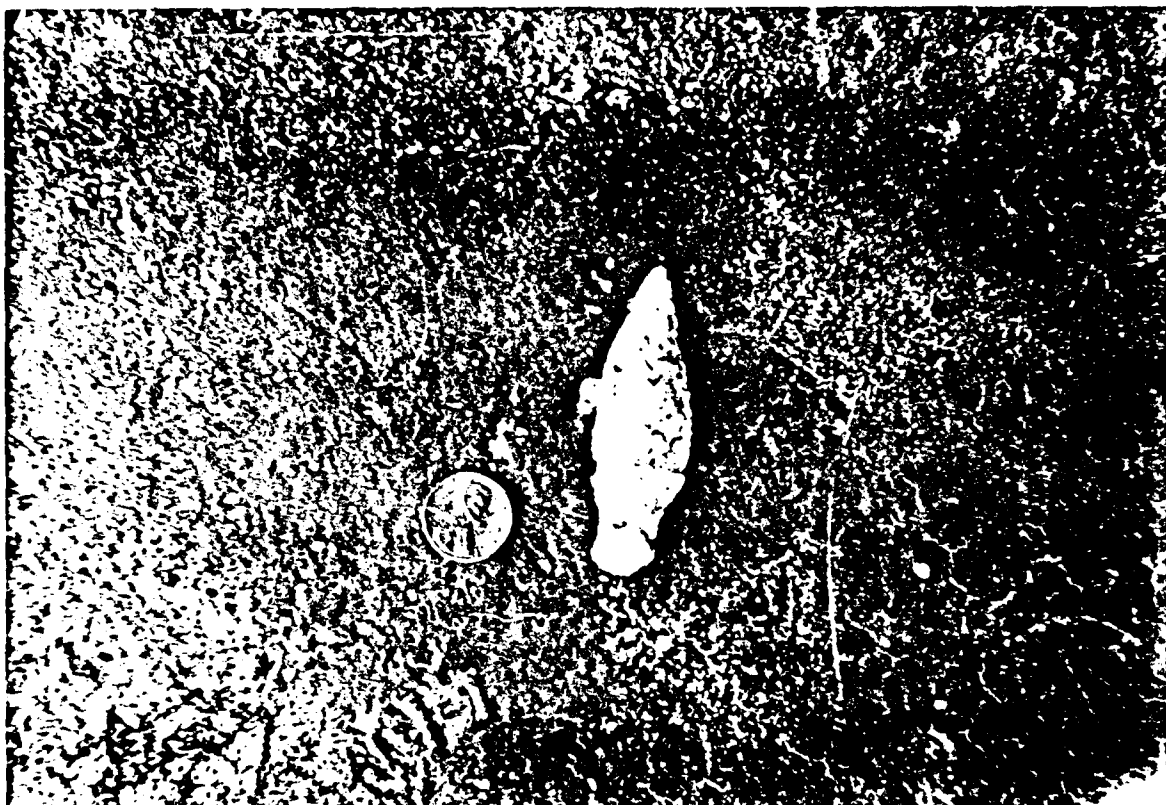


Figure 17: Kalmeth Collection-13Db59.



Unfortunately, our survey at Massey and Shawondasse was made at a time when few local residents were at home. This was especially the case at Showandasse. However, our surface collection at Massey does demonstrate the presence of a prehistoric site. Furthermore, the projectile points allegedly found by Mr. Kalmeth and the Gaharty's indicates occupation from the Late Archaic to late Middle Woodland times. Mr. Kalmeth's point, as noted above resembles the type Durst Stemmed which is indicative of the Late Archaic Stage (Wittry 1959b:179). The contracting stemmed point in the Gaharty's collection may date from Early to Middle Woodland times, and the expanding stemmed point represents a late Middle Woodland component (White 1968:178).

TABLE 9 - (13 DB59) Surface Collection

LITHICS

Retouched Flakes (1)  
Intentional Flakes (8)

(11Jd 135)

This site was located on a cultivated linear sandy terrace (elevation 620') which parallels the Mississippi River shore, in an area where the Illinois bluffs recede from the bottoms near the small town of Aiken. Small Pox Creek emerges from its bluff constricted valley to meander through this broad opening. The terrace on which the site was located is south of Small Pox Creek, and east of the Chicago Burlington and Quincy R.R. tracks. This terrace is likely a Pleistocene outwash land feature corresponding to those on which 11Jd113, 13Jk77, and 11Jd134 are located.

Materials were located from both the north and southern ends of the rise in grass and hay fields which exhibit open areas due to the loose nature of the sandy soils. The northern end (area a) was in non-cultivated grass, and produced only non-diagnostic materials (see Table 10). The southern end of the rise (area b) was in hay, and although no diagnostic artifacts were recovered at this end either, the density of materials appeared more concentrated than at area a. The distance between areas a and b is approximately 350 meters. Due to collecting conditions it is not yet determined if the area between is sterile of cultural materials or not.

This terrace is farmed by Mr. Frank Johnson who informed us that years ago this area was regularly plowed, and that "bird points" in particular had been found. Assuming that by "bird" points, Mr. Johnson meant small projectiles, this might imply a Late Woodland component. Mr. Ray Miller has collected area b and has recovered a possible Durst Stemmed point, (Wittry 1959 b: 179) an expanding stemmed point (White 1968) and Havana Ware pottery (Griffin 1952). These artifacts indicate (Figure 15) possible Late Archaic to Late Middle Woodland occupancy at this end of the site.

In addition a possible kiln was located at area b overlooking the R.R. tracks. No indication of the age or function of the kiln was ascertained, however, that it represents historic activity is of little doubt.

TABLE 10 (11Jd135) Surface Collection (Area A North end)

LITHICS

Intentional Flakes (21)  
Shatter (19)  
Unmodified Rock (1 chert cobble)

HISTORIC

Lead (1 bullet)

(11Jd135) Surface Collection (Area B south end)

LITHICS

Retouched Flakes (1)  
Intentional Flakes (42)  
Shatter (7)  
Fire-cracked Rock (1 limestone)

HISTORIC

Glass (1 insulator fragment)

(11Jd86) Aiken Corn Field

This site was located on a sandy rise (elevation 600') which slopes to the bottomland floodplain of the Mississippi River, at the place where Pilot Knob Road bends and crosses the Chicago, Burlington and Quincy R.R. Tracks near the town of Aiken. Small Pox Creek meanders from the east to the north a short distance from this site before entering the waters of the Mississippi. This rise may be too low to represent a Pleistocene outwash terrace.

This site had been previously located and reported by Gregg and Dudzik of the University of Wisconsin-Milwaukee in 1972. The collection made during that survey recovered the base of a single side notched point indicating Late Archaic-Early Woodland component affiliation. The amount of lithic artifacts suggested the site was possibly a workshop (Bareis 1981).

A brief surface collection was made to the southeast of the R.R. crossing, on a dirt road entering a cornfield which occupies the rise. Materials recovered are listed in Table 12.

Unfortunately none of the materials recovered is diagnostic of a particular prehistoric component. However, Mr. Ray Miller has collected this area, and has recovered Late Archaic Raddatz Side Notched, (Wittry 1959 a & b) Durst Stemmed, (Wittry 1959 6:179), and Mantanzas, (Perino 1968:54) points, as well as Early-Middle Woodland contracting stemmed points (White 1965) from the rise to the north of the dirt road (Figure 14). He has also collected Raddatz Side-Notched and probable Early Woodland straight stemmed points from the rise to the east of the R.R. Tracks (Figure 18).

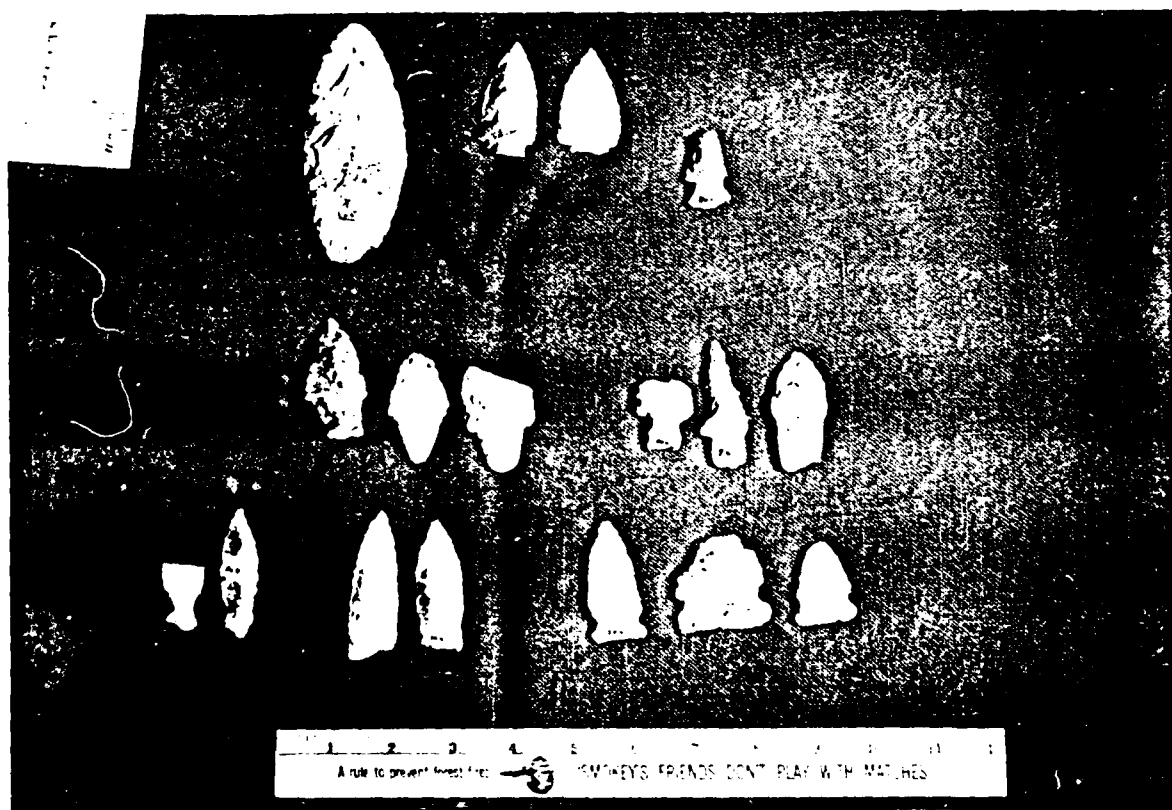
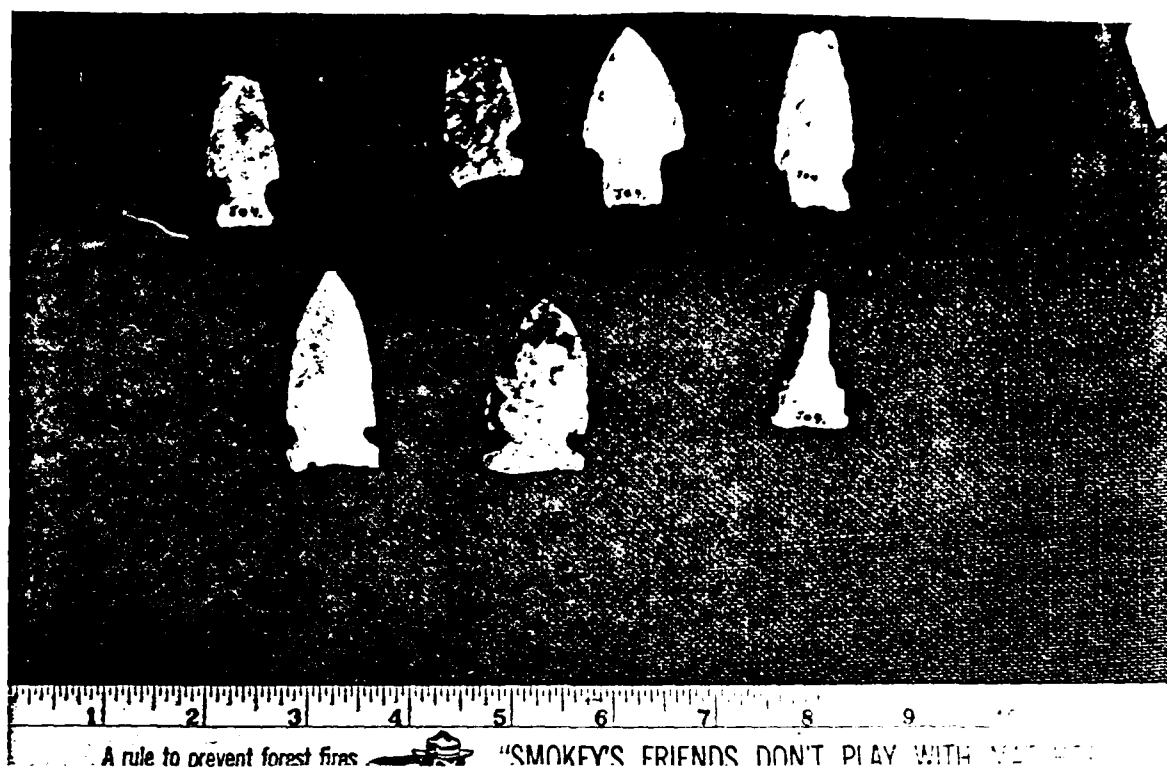


Figure 18: Miller Collection, 11 Jd 86.

TABLE 11 (11Jd86) Surface Collection

LITHIC

Retouched Flakes	(2)
Intentional Flakes	(8)
Scrapers	(1)

MAIN CHANNEL SITES:

(11Jd124)

The east side of the main channel of the Mississippi River opposite the mouth of Catfish Creek (Iowa side) is formed by a lowland island levee. The 1892 MRC map (Chart No. 161) indicates this area as an uninhabited, but vegetated lower end (elevation 595') of a major sand bar formation. The 1934 U.S. Army Corps of Engineers 1' contour plane table map indicates a concentration of historic structure lining the western shore of this land. Presently a single concrete foundation remains slumped onto the severely eroding shore. Historic debris, such as bottle caps, shell buttons, crockery, sawed bone, etc., litter the beach. Surface collections recovered a single prehistoric flake and a probable core separated by ca. 100 meters, and a few historic artifacts. The historic artifacts collected and observed all appear to date to the period of occupation following the 1892 MRC maps and prior to the Lock and Dam installation (mid-1930's).

In addition, numerous pieces of burned shale-like rock were noted and samples collected. These may be indicators of an early 19th century lead smelting operation. The Wisconsin Historical Collections refer to several such operations on an island in the Mississippi River (Meeker 1872:272, 275, 290, and (Thwaites 1895:284). Although none of the references specifically mention the location of 11Jd124, they do allow for the probability that the burned shale like material may represent the waste of such operations.



TABLE 12 (11Jd124) Surface Collection

LITHIC

Cores	(1)
Intentional Flakes	(1)

ORGANIC

Unburned Bone	(1)
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(11Jd131) North end Menominee Slough, South side

Menominee Slough is a meandering channel flowing through the lowlands near the Illinois Bluffs. Both the Little Menominee and Sinsinewa Rivers enter the bottoms through this slough. On the south side of the north entrance of Menominee slough is the severely eroding northern point of Island No. 233 (elevation 595'). The west side of this point forms the east shore of the main river channel. On both the main river and the Menominee Slough side of this point, prehistoric materials were collected. Materials were only recovered from redeposited contexts on the beach. The majority of the materials were collected on the main river shore approximately 40 meters south of the point, and 30 meters north of a navigation marker. The sample of artifacts is small (see Table 14), but one of the pottery sherds is a grit tempered, cord impressed rim sherd (Figure 19e) indicating a Late Woodland component.

Aproximately 250 meters down the west side of Island No. 233, where a side channel forks from the main channel around an unnamed island, a single small chert core was also recovered. This flake is mentioned in context of this site because, although no materials were recovered on the shore between, the collecting conditions were not ideal. Below navigation marker, the beach becomes very sandy. Such shore conditions have a tendency to cover redeposited artifacts rather than leaving them exposed as on more solid silty shores.

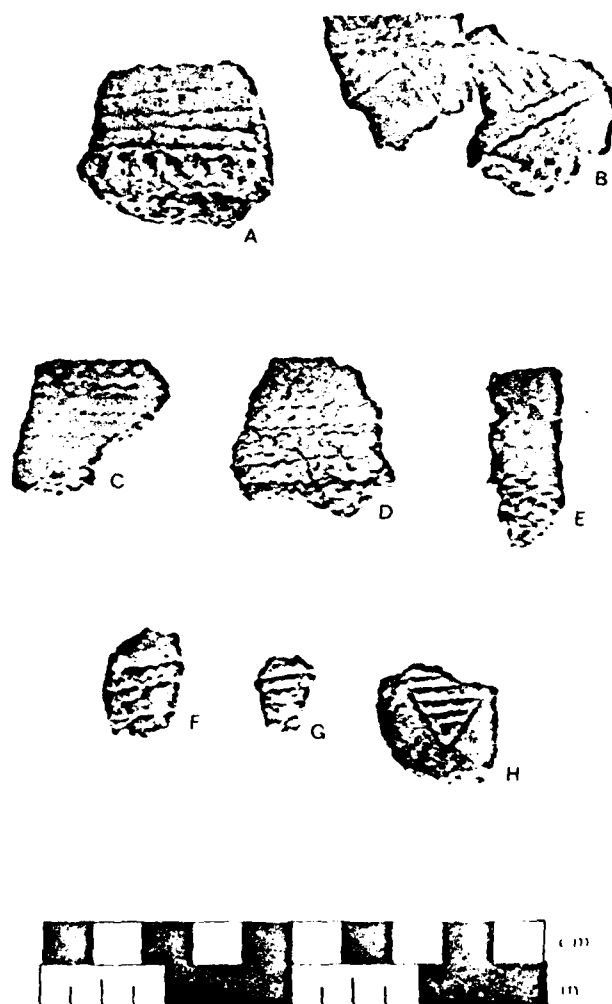


Figure 19: Late Woodland ceramics - lowland floodplain.

TABLE 13 (11Jd131) Surface Collection

LITHIC

Cores	(3)
Retouched Flakes	(1)
Intentional Flakes	(6)
Shatter	(6)
Points	(1 tip)
Fire-cracked rock	(1)
Miscellaneous	(2 calcite)

CERAMIC

Cord Impressed	(1 grit tempered Rim sherd)
Undecorated Body sherds - grit tempered	(1 smoothed over cordmarked)

(11Jdl33) Chemical Plant Island

At Nine Mile Island the main channel of the Mississippi bends eastward, and is one of the few places in Pool 12 where this channel meets the Illinois bluffs. As the channel again turns to the south a large area of lowland floodplain is found on the Illinois side. The uppermost island of this area of Illinois lowland is small and is presently suffering severe erosion. At the upper end of this island is a navigation marker set in concrete and rip-rap. Comparison of the location of this marker between the 1930's Corps pre-inundation plane table maps and recent topographic maps indicates that approximately 20 meters of the north end of this island has been lost.

Presently the navigation marker is separated by 15 meters from the intact north end of the island. Surface collection on the shore recovered a large amount of prehistoric materials here (see Table 15). The artifacts were found on the eroded shore between the navigation marker and the vegetated portion of the island, and to the south on the western shore for 50 meters. Vegetation consists of Silver Maple, River Birch, and Cottonwood. Soils are predominately silts. The elevation of the island is 595'.

Several diagnostic artifacts were recovered which indicate prehistoric occupation from late Middle Woodland to Late Woodland times. These include one grit tempered rim sherd with vertical cord-wrap stick impressions (9 mm. long) placed on the rounded exterior lip (Figure 20g). In addition, a horizontal row of double twist cord impressions is located 38 mm. below the lip. The exterior surface is smoothed-over cord-marked. The sherd is 5-6 mm. thick. In many characteristics this rim resembles vessels classified as Weaver Cord Marked (Griffin 1952: 121-122, 127) and Spring Hollow Cord Marked (Logan 1976:97). Both of these types are considered to date from late Middle Woodland times.

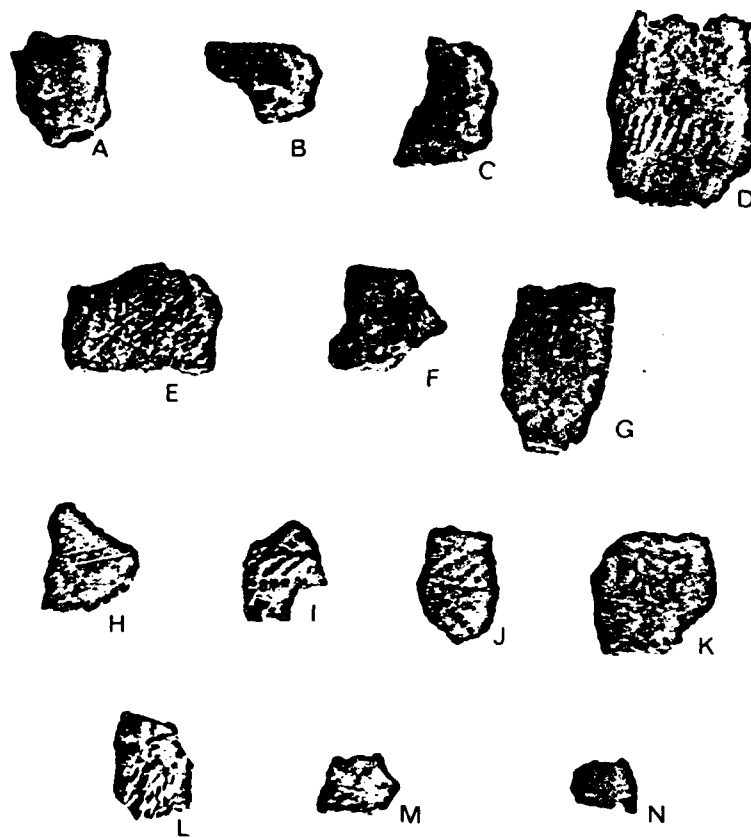


Figure 20: Middle Woodland ceramics - lowland floodplain.

TABLE 14 (11Jd133) Surface Collection

LITHIC

Cores (11)  
Bifaces (2)  
Retouched Flakes (7)  
Intentional Flakes (58)  
Shatter (22)  
Knives (1 corner-notched)  
Hammerstone (1)  
Fire-cracked Rock (3: 2 limestone, 1 ?)  
Unmodified Rock (1 chert nodule)  
Miscellaneous (3: 3 possible hammerstone spalls, 2 basalt,  
1 quartz)

CERAMIC

Weaver Cord Marked (1 grit tempered Rim sherd)  
Lane Farm Cord Impressed (1 limestone tempered rim sherd)  
Cord Impressed (1 grit tempered rim sherd)  
Undecorated Body Sherds-grit tempered (38: 6 cord marked,  
28 smoothed over cord marked,  
4 smooth)  
Undecorated Body Sherds-sand tempered (1 cord makred)  
Exfoliated Sherds (21: 20 grit tempered, 1 sand tempered)  
Burned Clay (2)

ORGANIC

Burned Bone (9)

The transitional Middle-Late Woodland type Lane Farm Cord Impressed (Logan 1976, Benn 1976, 1979, Stoltman 1980) is represented at 11Jd133 from a single rim and decorated body sherd of different vessels (Figure 19 a & b). The body sherd is from the neck area and is grit tempered. The rim sherd is limestone tempered. Each of these sherds has a cord impressed pattern placed over a smoothed-over cordmarked surface. Both sherds vary from 3-8 mm in thickness with the thinner area being near the lip.

The Late Woodland Period is represented by 5 sherds of cord impressed decorations placed over a cordmarked surface. These include one rim (Figure 19c) and four decorated body sherds (Figure 19d). All of these are grit tempered. These sherds range in thickness between 2.5-5 mm.

With the exception of one sand tempered sherd, all of the undecorated body sherds are grit tempered, and fall within the range of late Middle Woodland vessels. The sand tempered sherd is 5-7 mm thick, and may represent a vessel of the late Early Woodland/Early Middle Woodland era. A single corner-notched chert implement (Figure 21b) which is consistent with the component range indicated from the ceramics was also recovered. The chipped stone tool has asymmetrical sides suggesting that it functioned as a knife.





Figure 21: Stone tools - lowland floodplain.

Side Channel Sites:

(11Jd116) Wickman's Dam

This site is located on the east side of Deadman's Slough in a severely eroding cut just below the now submerged Wickman's Dam. Wickman's Dam was constructed prior to 1892 (MRC Chart 160), for the purpose of diverting the river current away from Deadman's Slough and into the present main channel to the west. At the upper end of the bank cut is a concentration of limestone which probably represents the east end of the dam. The cut into the natural levee represents a severe act of erosion at the lower side of the dam. The cut is ca. 30 meters N-S by 10 meters E-W. The erosion at this location is most likely resulting from the raised water of the pool spilling over the submerged dam. Constant unstable water eddying is easily seen in the waters just below the dam and in front of the site.

The land here is a levee formation which separates Deadman's Slough, a side channel of the river, from a series of back water ponds above the mouth of the Sinsinewa River. The site is situated at the highest portion of the levee (elevation 590-595') forming the east side of Deadman's Slough. The vegetation on the present surface of the levee is dominated by Silver Maple with a dense understory of Poison Ivy and Nettle.

The site was originally located during a period of high water when no foreshore was exposed. At that time materials were exposed in the vertical bank ca. 1 meter below the surface. After the water dropped to a level below 7.5' (as measured at Dubuque, Iowa), two in situ concentrations were noted. The first of these consisted of four burned pieces of limestone in a slightly darker pocket of soil about 50 cm. wide. The second concentration was a small lens of shell located about 2.5 meters north of the burned limestone, and at the same level. An attempt was made to collect shell specimens for identification, however, the saturated valves proved too fragile.

TABLE 15 (11Jd116) Surface Collection

LITHICS

Intentional Flakes (1)  
Shatter (5)  
Fire-cracked Rock (3 limestone)

CERAMIC

Late Woodland Cord Impressed (1 rim, 1 decorated body sherd)  
Undecorated Body Sherds-grit tempered (10: 3 cordmarked,  
7 smoothed-over cordmarked)

HISTORIC

Metal (4 rusted iron)

Exposed In-Situ

LITHICS

Intentional Flakes (2)

CERAMIC

Undecorated Body Sherds-grit tempered (3: 1 cordmarked,  
2 smoothed-over cordmarked)

ORGANIC

Shell (2 fragments)

Test Cut (78-80 cm.)

HISTORIC

Metal (3 rusted nail fragments)

Test Cut (115-125 cm. Feature 1)

LITHIC

Shatter (5)  
Fire-cracked Rock (9 limestone)

For purposes of better understanding the sedimentation above apparent occupation level, and with the hope of recovering diagnostic artifacts, a single 1 meter wide X 20 cm. thick test cut was made into the bank face directly above the burned limestone (Figure 22). All soil was carefully trowelled to recover materials.

Five apparent soil horizons were discerned while excavating the test cut. A description of these horizons and the depths of each is listed below:

Horizon A 0-20 cm. Loose organic silt (roots)  
Horizon B 20-65 cm. Dark organic silt, medium compaction.  
Horizon C 65-85 cm. Dark silt, vary compact.  
Horizon D 85-11 cm. Same as Horizon B  
Horizon E 100-127 cm. Light orange/brown silty loam.  
Water Table 127 cm. (River level at 8.2' as measured at Dubuque.)

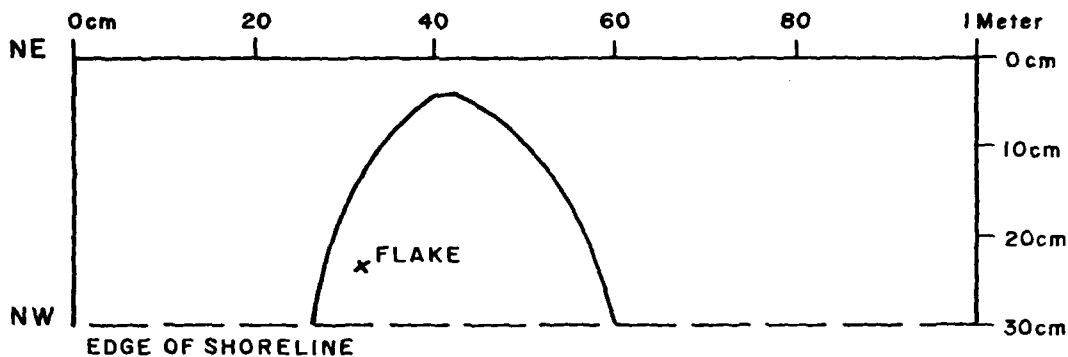
In the compacted Horizon C at a depth of 78 cm. below surface, three very rusted nails were recovered. It is possible that this level represents the construction episode of Wickman's dam.

At a depth of 115 cm. below surface, within Horizon E, the soil above and surrounding the burned limestone appeared as a dark semi-oval stain. This was designated Feature 1 (Figure 23). The contents of the feature were removed. In addition to burned limestone, several chert flakes and fragments of charcoal were recovered (see Table 15). Unfortunately, no diagnostic artifacts were found in association with Feature 1. This feature appeared to continue to a depth below the water table (127cm) precluding complete excavation.

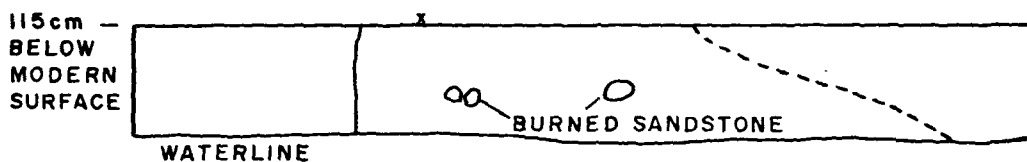
The materials recovered from Feature 1 suggest it functioned as a fire hearth. In addition to the burned limestone and charcoal, the chert flakes were all burned as well. Many of the flakes associated with the feature are shatter type, and all may have originated from the same piece of parent material.



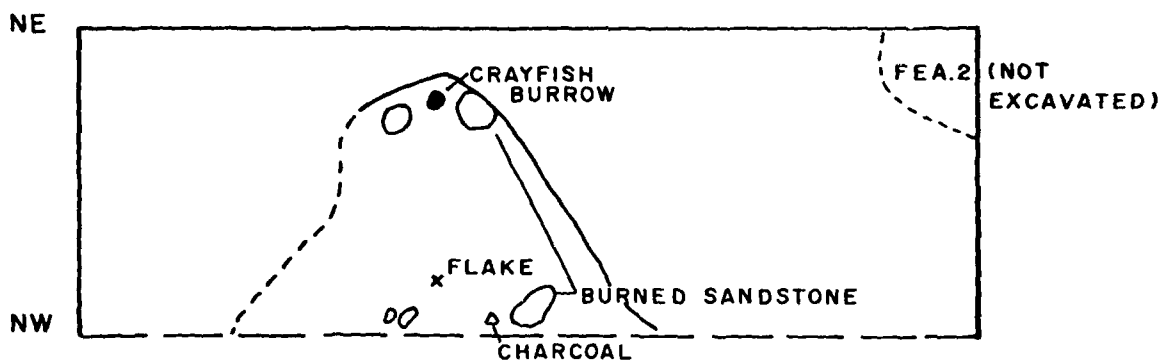
Figure 22: 11 Jd 116, Test cut.



PLANVIEW OF FEATURE AT 115 cm  
BELOW SURFACE



PROFILE OF FEATURE AT EDGE  
OF SHORELINE  
FACING EAST



PLANVIEW WITH FEATURE EXCAVATED  
TO 127cm (WATER TABLE LEVEL)

Figure 23: 11 Jd 116, Feature 1, plan and profile views.

Removal of the remainder of Horizon E (outside of Feature 1), to the water table, resulted in the discovery of a second dark stain with burned limestone. This second feature was located 40 cm. south of the first. This feature was not yet exposed in the eroded bank cut. The surface of the second feature was just at the water table again precluding excavation.

Following the excavation of the test cut at 11Jd116, the water level dropped to a low of 6.8'. At this level a narrow silty beach was exposed. Surface collection of the beach recovered several flakes and a few pottery sherds (Table 15). Burned flakes were recovered from in front of Feature 1. The sherds were all collected from an area ca. 10 meters north of the test cut and Feature 1. Close inspection of the vertical bank face above the redeposited sherds located three additional ceramic pieces exposed, but still in the vertical in-situ position. The in-situ sherds were at an elevation slightly higher than Feature 1 and the shell concentration.

All of the sherds collected from this site are grit tempered and relatively thin. Sherd thicknesses range from 2 mm. (2 sherds from the foreshore beach), 3-4 mm. (the in-situ sherds), to 5 mm. (1 sherd from the foreshore beach). All of the sherds have cordmarked or smoothed over cordmarked exterior surfaces. It appears that at least three vessels are represented. The pastes contain little if any sand. Two of the sherds from the foreshore beach are decorated with cord impressions. One of these is a rim sherd. Based on the decoration, paste and thickness, the ceramics at this site imply a Late Woodland component affiliation.

(11Jdl25) Crooked Slough

At the outlet of Frentress Lake and to the south there exists a narrow channel referred to on recent navigation charts as the Frentress Lake Slough. Three prehistoric sites (11Jdl25, 11Jdl26, 11Jdl28) were found along the northeast side of this channel. This shore is characterized by non-continuous high vertical banks which are being severely eroded. The eroding banks provide a longitudinal cross section of levees which dip gently to the northeast. The prehistoric sites were found at the high vertical exposed banks.

11Jdl25 is the middle of the three sites located along the east side of this channel. This site occupies the shore between the northern and southern outlets of Crooked Slough (possibly an abandoned channel of the Menominee River). The distance between these openings is about 150 meters. The vegetation along this levee shore consists of Oak, Black Locust, River Birch, Walnut and Silver Maple. Exposed soils in the vertical banks were observed to be a rather continuous silt-silty loam. No prehistoric land surface could be identified visually. Soils in the upper 40-70 centimeters appeared to contain more sand than those below. The sandier upper levels may represent historically deposited soil. The variability of depth of the upper sandy zone most likely reflects an uneven longitudinal erosion of the levee. Below the sandier upper levels, the soil is more of a pure silt becoming more loamy towards the lowest levels. At the north end of the site, the present land surface (elevation 595-600') is higher, and erosion of this portion of the levee and site is most severe. Towards the southern end, the bank surface dips gently dropping approximately 50 centimeters in the 150 meter length of the levee.



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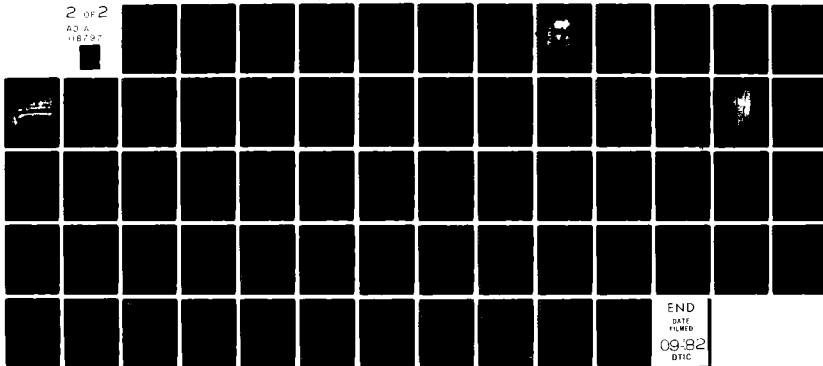
GREAT LAKES ARCHAEOLOGICAL RESEARCH CENTER INC WAUKE--ETC F/6 5/6  
PRELIMINARY INVESTIGATIONS: ARCHAEOLOGY AND SEDIMENT GEOMORPHOL--ETC(U)  
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Prehistoric materials were recovered from the entire length of the levee between the openings of Crooked Slough. There was a noticeable difference in the quantity of artifacts between the higher northern end, and the southern two-thirds of the levee. More cultural material was recovered from the northern one-third of the levee where the shore is silty. Towards the southern end the shore becomes increasingly covered with sand, which probably has covered redeposited artifactual materials.

At several locations along the exposed bank, non-diagnostic artifacts were recovered from in situ contexts. These were recovered below a depth of 1.2 meters below the surface near the northern end, and 1.0 meters nearer the southern end. A list of materials recovered is presented in Table 16. Several decorated ceramic sherds were recovered which indicate multicomponent occupation. These include two decorated rim sherds and three decorated body sherds. One rim sherd exhibits dentate stamping, as does one of the decorated body sherds. A second sherd is stamped with an unknown implement, and has punctates. The second rim sherd is also punctated. The final decorated sherd is cord impressed.

The dentate stamped rim sherd (Figure 20b) is tempered only with sand. The lip is flattened and is 10 mm. thick. On the smooth exterior surface, beginning at the lip, are parallel oblique lines of dentate tool impressions. The lip form and decoration on this sherd suggest Middle Woodland (Havana Ware) affinities, however, the sandy paste is uncharacteristic of this ware group (Griffin 1952).

The dentate stamped body sherd (Figure 20h) is grit tempered and is 6-7 mm. thick. Two parallel lines of fine toothed dentate stamping (2mm. apart) have been applied to the smoothed exterior surface. Two additional lines of the same stamp are less clear. One of these is parallel to the first two, though separated by 7 mm. on the surface. The last lies at an oblique angle from these. Typologically, this sherd may represent the late Middle Woodland (Linn Series) type Levsen Stamp variety dentated (Logan 1976: 93-94).

One of the sherds with exterior punctations contains a band of shallow impressed stamping (Figure 20d) . The stamps were applied in adjacent parallel columns, and may be a rounded dentate stamp or the edge of a cord wrapped paddle. The decoration has been impressed onto a smooth surface. The lower end of the stamped band is 23 mm. above the circular punctates. The punctates are aligned in a row, and are spaced 10-12 mm. apart. This sherd is also grit tempered, and is 6-7 mm. thick. This sherd probably represents a ceramic variety with Middle Woodland temporal affinities.

The other punctated sherd is distinct from the above described one in that the exterior surface is cordmarked (Figure 20f). A small portion of flattened lip is present 14 mm. above the punctations. The punctates are smaller in diameter than the above sherd, and are spaced 8 mm. apart, in a row. The sherd is limestone tempered and is 5 mm. thick at the lip and 8 mm. thick at the punctates. Typologically this sherd shows attribute affinities to Havana and/or Weaver cordmarked (Griffin 1952:121), or Shorewood Cord Roughened (Hurley 1975:216 and Salzer nd:25), and likely dates to the Middle Woodland Period.

The cord impressed body sherd is grit tempered and 2.5-4 mm. thick (Figure 19h). The cord impressions form a triangular motif onto a smoothed over cord marked exterior surface. This sherd undoubtedly represents a Late Woodland Component.

The remainder of the ceramics from this site are all undecorated. However, paste, thicknesses, and surface treatments of these could fall into ceramic types affiliated to the components identified from the decorated sherds. The sand tempered sherds might also be indicative of an earlier (pre-Havana) component.

TABLE 16 (11Jd125) Surface Collection (General Surface)

LITHIC

Cores (2)  
Bifaces (2)  
Retouched Flakes (1)  
Intentional Flakes (42)  
Shatter (5)  
Scrapers (1)  
Hammerstones (3: 2 basalt, 1 also ground; 1 quartzite)  
Ground stone (1 granite)  
Fire-cracked Rock (2: 1 limestone, 1 chert)

CERAMICS

Naples Stamp variety Dentate (1 sand tempered rim sherd)  
Levsen Stamp variety Dentate (1 grit tempered body sherd)  
Levsen Stamp variety (?) (1 grit tempered body sherd)  
Weaver Cord marked (?) (1 limestone tempered body sherd)  
Late Woodland Cord Impressed (1 grit tempered body sherd)  
Undecorated Body sherds-grit tempered (4: 1 cord marked,  
2 smoothed over cordmarked, 1 smooth)  
Undecorated Body Sherds-limestone tempered (1 cordmarked)  
Undecorated Body Sherds-sand tempered (9: 5 cordmarked,  
2 smoothed over cordmarked, 2 smooth)  
Exfoliated sherds (8: 6 grit tempered, 1 limestone tempered,  
1 sand tempered)

ORGANIC

Burned Bone (2)

Surface Collection (North End)

LITHICS

Intentional Flakes (20)

CERAMIC

Undecorated Body Sherds-sand tempered (4: 3 cordmarked,  
1 smooth)  
Exfoliated sherds (6: 3 grit tempered, 3 sand tempered)  
Burned Clay (3)

(11Jd128) North of Crooked Slough

This site is located from 100-175 meters Northwest of 11Jd125 and on the same side of Frentress Lake Slough. The vegetation, soils, and shoreline conditions are similar at both sites with the exception of a lack of sand on the beach at 11Jd128. 11Jd125 and 11Jd128 are physiographically separated by the northern outlet of Crooked Slough and the narrow outlet of Round Lake 15 meters further up Frentress Lake Slough. From the north side of the outlet of Round Lake, the levee on which 11Jd128 is situated is unbroken. However, no materials were recovered on the southeastern 75 meters of this levee. As at 11Jd125, the vertical exposed bank is highest at the upper end. The northern boundary of 11Jd128 is marked by a marshy area.

Surface collection along the foreshore of the severely eroding bank recovered a relatively large sample of prehistoric materials. These are listed in Table 17. Included within this sample are two projectile point/knives, and several decorated ceramic sherds. One of the point/knives is a corner notched subtriangular blade having the form of an expanded stem (Figure 21c). The stem is noticeably ground on all edges. In form this point is similar to expanding stem types common to the late Middle Woodland Period (White 1968:168). However, the basal grinding and form also bear similarities to Late Archaic types such as Durst Stemmed (Wittry 1959a:48, 1959b:179). The second point/knife is rather crudely made (Figure 21d). The base has been snapped off just below shoulders. The blade is fairly wide suggesting a possible Middle Woodland ovate blade form (White 1968:174-176). Mr. Alfred Reed of Prairie du Chien, Wisconsin has recovered numerous examples of very similar point/knife forms from lowland floodplain sites in Pool 10. It is possible that the broken bases of these points were intentionally created, plausibly for aiding hafting of the point to a split wooden shaft. However, until studies document such inferences and identification of cultural historical relationships, component affiliation of the broken base, ovate blade point/knives is speculative.

TABLE 17 (11Jd128) Surface Collection

LITHIC

Cores (4)  
Bifaces (4)  
Retouched Flakes (3)  
Intentional Flakes (60)  
Shatter (8)  
Points (2: 1 Durst or ground expanded stem, 1 broken side  
or corner notched)  
Scrapers (1)  
Hammerstones (2: 1 ground)  
Unmodified Rock (9: 7 cobbles, 2 limestone)

CERAMIC

Fingernail impressed (2 sand tempered body sherds)  
Cord-wrap stick impressed interior lip (1 sand tempered neck  
sherd)  
Naples Stamp variety dentate (1 limestone tempered body  
sherd)  
Douglass Net Marked ? (1 limestone tempered body sherd)  
Oblong stamp (1 grit tempered body sherd)  
Levsen Punctated (2 body sherds, 1 grit tempered, 1 ?  
tempered)  
Levsen Stamp variety dentate (2 sand tempered body sherds)  
Spring Hollow Plain (1 grit tempered body sherd)  
Cord Impressed ? (1 grit tempered body sherd)  
Undecorated Body Sherds-grit tempered (11: 5 cordmarked, 4  
smoothed over cordmarked, 2 smooth)  
Undecorated Body Sherds-limestone tempered (11: 8 cord-  
marked, 2 smoothed over cordmarked, 1 smooth)  
Undecorated Body Sherds-sand tempered (3: 2 cordmarked, 1  
smooth)  
Exfoliated Sherds (35: 11 grit tempered, 15 limestone  
tempered, 9 sand tempered)  
Burned Clay (4)

ORGANIC

Burned Bone (14)

Fortunately, the ceramics from 11Jd128 are more informative of the prehistoric occupancy. A single rim sherd was recovered (Figure 20k). This sherd is partially eroded, however, enough of the exterior surface remains to show a smoothed over cord-marked treatment. The paste is sandy with some crushed rock grit tempering added. The lip is badly eroded precluding form identification. This sherd measures 3 mm. thick at the lip and 5 mm. thick at its lower edge which appears to be near the top of the shoulder area of the vessel. The sherd is typologically similar to late Middle Woodland forms such as Spring Hollow Plain (Logan 1976:98). At least two decorated body sherds can tentatively be assigned to the same component as the rim sherd. These sherds have shallow punctations placed on a smoothed surface. The punctations were made with a blunt tool impressed at an angle. One of the sherds is grit tempered and 5 mm. thick (Figure 18l). The interior of the second sherd (Figure 20n) has been exfoliated. The temper and thickness of the latter sherd are not known, however, its paste contains more sand than the non-exfoliated sherd. These sherds are tentatively classified as Levsen Punctated (Logan 1976:94-96).

Two additional decorated body sherds were recovered which probably represent the late Middle Woodland type Levsen Stamped variety dentate (Figure 20i,j) (Logan 1976: 93-94). These sherds show an identical decorative motif and may represent the same vessel. Both sherds have a band of oblique parallel dentate stamping bounded on top and bottom by horizontal rows of dentate stamps. The bands are 10 mm. wide. In addition, each sherd shows a single line of dentate stamping at an oblique 90 degrees from those within the bands. This single line merges with one of the horizontal lines forming the border of the bands. The surface area of these sherds are small, and it seems likely that additional stamped lines parallel to the single oblique lines occurred on the vessel. On one of these sherds, a single oblique row of dentates, laid in the same direction as those within the band, occurs on the opposite side of the band. Both sherds have a sandy paste with a small amount of crushed grit temper added.

The thickness of one sherd ranges from 5-7 mm. while the second varies from 6-8 mm. The dentate impressions are somewhat irregular ranging from 1-2 mm. wide.

A third body sherd (Figure 20c) also exhibits dentate stamping, however the dentates are wider (2.5-3 mm.), the paste is clayey, and temper was probably limestone, suggesting a slightly earlier component affiliation than the Levsen Stamped sherds. This latter sherd is 7 mm. thick, and has a smoothed surface. The dentates are placed in adjacent parallel lines forming an apparent zone on the vessel. Typologically, this sherd shows affinities to Naples Stamped variety dentate, a Middle Woodland Type (Griffin 1952: 110).

Several sherds document a late Early Woodland/early Middle Woodland component at 11Jd128. Two sherds exhibit fingernail impressions as a decoration. On one of these, the fingernail impressions have been placed in continuous rows forming five horizontal lines (Figure 24b). These do not cover the entire surface of the sherd. Below or above the rows is a partially preserved section of a vertical column of fingernail impressions. On this sherd the impressions have been placed on a cordmarked surface. The paste is sand, with no additional temper. This sherd is 5-6 mm. thick. The second sherd is only a small fragment, and is partially eroded. On this sherd a column of three fingernail impressions has been placed onto a smooth surface (Figure 24d). Paste is identical to the other fingernail impressed sherd. This sherd is 6-6.5 mm. thick. Ceramics with similar attributes have been recovered in undisturbed contexts from the islands in Pool 10, and are interpreted as representing a pre-Havana ceramic component, (Stoltman, Theler, Arzigian Personal communications. Boszhardt 1982).



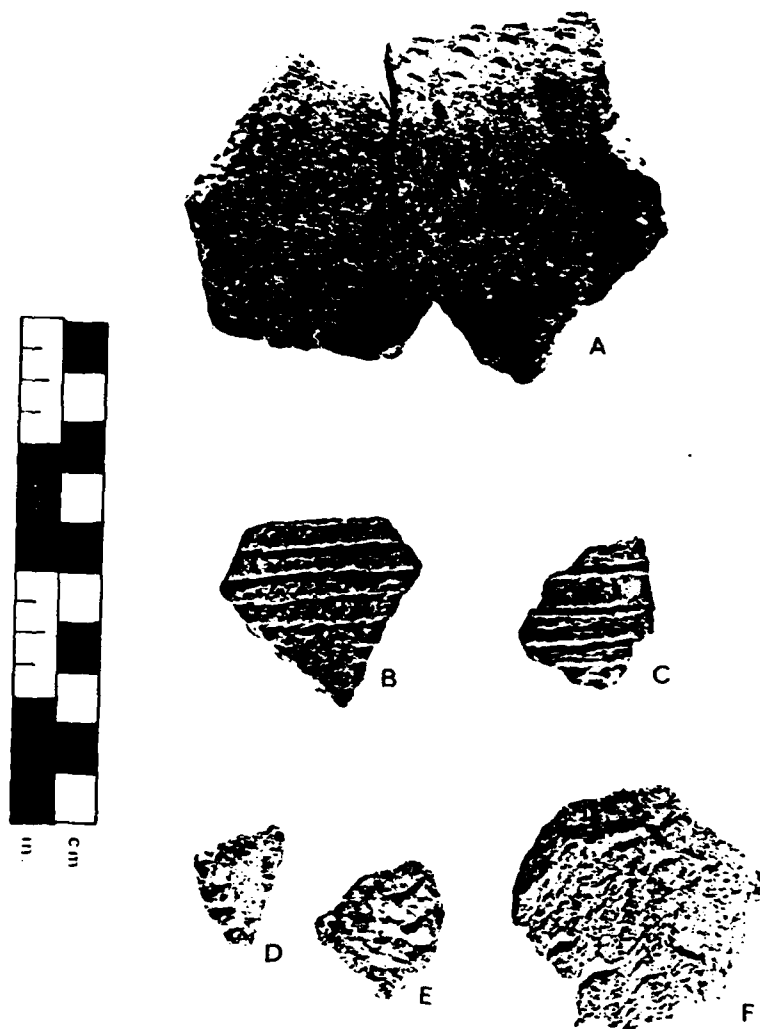


Figure 24: Early/Middle Woodland Ceramics.

One large section of the neck of a vessel was recovered which may also have affinities to Pre-Havana ceramics (Figure 24a). The paste is sandy, and the exterior is cordmarked. Thickness ranges from 5.5-6.5 mm. The only decoration is found on the smoothed interior where parallel lines of semi-oblique cord wrapped stick impressions occur. These indicate that only the lip of this otherwise complete rim sherd is missing. Vessels interpreted as being of Pre-Havana cultural affiliations from Pool 10 often have similar interior decoration. (Boszhardt 1982). However, it is also possible that this sherd might be affiliated to late Middle Woodland ceramics which often have cord-wrap stick impressions as decoration (eg. the type Spring Hollow Cord Marked, Logan 1976: 97).

Three other sherds were recovered with possible decorative elements, but for various reasons are not clearly reliable as diagnostic artifacts. The first of these is a body sherd which appears to have a loose fabric or net impressed surface treatment. (Figure 20e) The impressions are not readily apparent, however, close examination reveals perpendicular cord impressions forming a square "mesh" 1 cm. wide, with the impressions having been woven over and under each other. Knot impressions are not apparent. The paste of this sherd contains sand. Additional temper exists in the form of small crushed grit, and possibly leached limestone, as is suggested from numerous hollow pockets. The most relevant type to which this net or fabric impressed sherd shows affinities is Douglass Net Marked which is interpreted to date from late Middle Woodland to Late Woodland times. (Hall 1962: 168)

A second problematical sherd is a grit tempered body sherd which has an area of vertical cordmarking and a smoothed area on the exterior surface (Figure 20l). Within the smoothed area are two oblong stamp impressions alligned in a vertical column. These impressions measure 5 x 3 mm., and were made with a blunt tool. The interior of the sherd undulated varying the thickness from 3.5-8 mm. It would appear this sherd represents a vessel that had a smoothed upper section on which a punctated decoration was applied. The lower portion of the vessel was cordmarked.

Given the paste, thickness and surface treatment reconstruction, it seems plausible to assign this sherd to a late Middle Woodland ceramic ware group. However, as the decoration is enigmatic, no type designation is attempted here.

The final puzzling sherd is a grit tempered body sherd which has a single oblique cord impression crossing vertical cord marking on the exterior surface. This decoration would imply Late Woodland affiliations, however, this sherd is 10 mm. thick which is somewhat excessive for most Late Woodland vessels. In addition, a few other indications of a Late Woodland component at this site have been recovered. The other possible indications of this component are five grit tempered, undecorated cordmarked body sherds. However, these could very well represent body sherds of ceramic types affiliated with any Woodland Component. It is also possible that the diagonal cord impression on this sherd is not the product of intentional decoration.

In summary, diagnostic ceramics indicate prehistoric activities at 11Jdl28 from at least late Early/Early Middle Woodland times through late Middle Woodland times. In addition, somewhat problematical diagnostic artifacts indicate the possibility of a Late Archaic and Late Woodland component as well.

(11Jd126) South of Crooked Slough

11Jd126 is the southern most of the three sites located on the eastern shore of Frentress Lake Slough south of the outlet of Frentress Lake. Materials were recovered on the shore in front of the eroding levee bank beginning approximately 1/4 mile southeast of 11Jd125.. The site continued for ca. 200 meters to the mouth of the Menominee River. The conditions of the bank are very similar to those at 11Jd125 with a silty shore at the northwest end, and becoming more sandy to the southeast. The bank height remains relatively high and uniform (elevation 595-600') for the length of the site. Vegetation is the same as at 11Jd125 and 11Jd128 consisting of Oaks, River Birch and Silver Maple. The middle section of the site has cleared areas on the levee surface which are the result of former historic structures. Recent historic debris were sporadically seen on the shore. About thirty meters of shore is protected with stone rip-rap.

Surface collections along the shore recovered numerous prehistoric artifacts which are listed in Table 19. No artifacts were recovered from in-situ contexts. However, at the southern end of the site several non-diagnostic artifacts were recovered on the sandy beach very near the surface of the bank.

The only diagnostic artifact recovered is a single small grit tempered, cord impressed ceramic sherd (Figure 19g). This sherd measures only 3 mm. thick, and undoubtedly represents a Late Woodland Component. The majority of the ceramics recovered are thin grit tempered, cord marked or smoothed-over cord marked, and most likely can also be affiliated to Late Woodland origins. These sherds were all collected from a restricted area of about 20 meters of shore beginning approximately 60 meters from the north end of the site and located in front of a burned historic structure. A single undecorated body sherd is unique from the Late Woodland sherds having a sandy paste with only minor grit tempering, and being 6 mm. thick. This latter sherd indicates the possibility of an earlier component.

Between 20-30 meters from the north end of the site a scatter of fiber tempered burned clay was noted and samples collected. This "daub" may indicate the presence of a prehistoric structure being eroded from the bank. Interestingly, in the same vicinity of the shore numerous burned bone fragments were also recovered. This site produced the largest amount of burned bone from all of the sites located during the Pool 12 survey.

In September 1981, the southeast end of this site was disturbed during construction of the entrance to a barge terminal. A field check was made soon after dredging into the bank from the channel had begun. Prior to the dredging, the land surface had been cleared of vegetation and stripped to the base of the roots. The foreman of the construction crew indicated that this stripping had removed between 1-2' of soil. At the time of the field check, the dredge had cut ca. 20 meters into the cleared bank. In the dredge cut profile, soils appeared as a band of dark silt underlaid by pure sand. The silty band was ca. 40 mm. thick at the west edge of the dredge cut and tapered into the pure sand to the east. The tapering of this band is interpreted as representing the edge of a natural levee. Exposed in the silty portion of the dredge profile, and at the west side, was a distinct shell midden (Figure 25). The shell was observed as a thin lens within the silty horizon. Surface inspection of the surface above the lens indicated the shell midden had been partially disturbed from the stripping and clearing.

Between 9/20 and 11/9/81 several collections were made of the disturbed portion of the shell midden. These collections recovered artifactual materials of prehistoric and historic age. The prehistoric materials include a chert core, flakes, bone and ceramics. The materials were recovered from the surface of the cleared land above the shell midden and from the profile of the dredge cut after the dredging had removed the east edge of the midden. Materials recovered from the profile indicated the



Figure 25: Exposed profile-11 Jd 126.

occupation was restricted to the upper silty soil horizon, and prehistoric artifacts were found in apparent association with the shell. In addition a pit feature was observed in the dredge profile extending from the silt horizon well into the sandy soil below.

As the remainder of the shell midden within the cleared surface is scheduled to be removed during further construction of the barge terminal, additional testing at this site has been initiated as an amendment to this project.

The historic materials recovered are undoubtedly related to structures which are indicated on the 1930's plane table maps of this pool.

TABLE 18 (11Jd126) Surface Collection (excluding disturbed SE portion)

LITHICS

Cores (4)  
Bifaces (1 fragment)  
Retouched Flakes (2)  
Intentional Flakes (28)  
Shatter (3)  
Points (1 tip)  
Fire-cracked Rock (20: basalt, granite, limestone)  
Unmodified Rock (1 cobble)  
Miscellaneous (1 ground stone, possible whetting stone)

CERAMIC

Cord Impressed (1 grit tempered body sherd)  
Undecorated Body Sherds-grit tempered (13: 5 cordmarked, 8 smoothed over cordmarked)  
Undecorated Body Sherds-sand tempered (1 smoothed over cordmarked)  
Exfoliated sherds (9 grit tempered)  
Burned clay-fiber tempered (31)

ORGANIC

Burned Bone (29)  
Unburned Bone (8)

HISTORIC

Metal (1 rusted iron)



(11Jdl29) Outlet of Frentress Lake North side

Between the outlets of Frentress and Switzer Lakes is a series of small islands whose western sides are being severely eroded. On the southernmost island prehistoric materials were collected on the entire western shore (ca. 150 meters). A few artifacts were seen exposed in-situ at depths of 1-1.5 meters below the surface. The bank conditions are similar to those at 11Jdl25, 126 and 128. Vegetation consists of a few Oak, Silver Maple, Cottonwood and Black Locust.

Materials consisted of lithics, ceramics, bone and lead which are listed in Table 19. A single small corner notched point represents the best diagnostic artifact recovered (Figure 21f). This point probably represents a Late Woodland component. The ceramic sherds are all grit tempered with smooth exterior surfaces, and range in thickness from 5-7 mm. The paste, thickness and exterior surface treatment of these sherds fall within the range of many late-Middle Woodland ceramic types.

One of the lead pieces is cast and drilled, and represents an historic artifact. The second is very irregular, but has a distinct groove around it. The groove appears to have been cut with a series of chopping blows utilizing a sharp implement. Determination of prehistoric or historic cultural affiliation for the grooved object is difficult. Early accounts imply that aboriginal peoples did not melt lead until shown the process of smelting by Europeans (Thwaites 1895 280-281). The grooved lead artifact is irregular, but has been smelted suggesting historic age.

TABLE 19 (11Jd129) Surface Collection

LITHICS

Cores (5)  
Retouched Flakes (4)  
Intentional Flakes (79)  
Shatter (4)  
Points (1 corner-notched triangular)  
Knives (1)  
Scrapers (2)  
Hammerstone (2: 1 broken, possibly ground)  
Firecracked Rock (6 limestones)  
Unmodified Rock (5: 2 cobbles, 1 chert, 1 limestone, 1  
quartz cobble-possible hammerstone)

CERAMIC

Undecorated Body Sherds- grit tempered (7)  
Exfoliated Sherds (3: 2 grit tempered, 1 sand tempered)

ORGANIC

Burned Bone (3)  
Unburned Bone (1)

HISTORIC

Metal (2 lead)

(11Jd130) Outlet of Frentress Lake South side

A few prehistoric artifacts were recovered on the upper tip of an island forming the south side of the outlet of Frentress Lake (elevation 595'). Erosion is severe on both sides of this island. The western shore is exposed to a wide side channel of the river, and the shore is sandy. The east side forms the west side of the channel along which 11Jd126, 126 and 128 were located. On the west side of the northern tip of this island, a broken cobble was recovered ca. 30 meters from the tip of the island. This cobble was located between two eroding shell middens. It is not known if the shell middens are of prehistoric or historic age. On the northeast side of the island two flakes and one grit tempered cord marked body sherd were recovered. The interior surface of the sherd has exfoliated away, precluding interpretation of cultural affiliation.

The 1892 MRC map indicates this island as having been attached to the southern end of the island across the mouth of Frentress Lake. The latter island is the location of 11Jd129, indicating the possibility that 11Jd130 may be an historically cut off portion of 11Jd129.

TABLE 20 (11Jd130) Surface Collection

LITHIC

Intentional Flakes (2)

Miscellaneous (1 cracked quartzite cobble)

CERAMIC

Undecorated Body Sherd-grit tempered (1 cordmarked)

BACKWATER LAKE SITES:

Frentress Lake South side Point. (11Jd134)

Located on the opposite side of Frentress Lake from 11Jd138 is a rounded northward protruding point. The present land surface of the point is at an elevation of 595 feet. Severe erosion is occurring all along this shore. Surface collections on the eroded shore yielded several artifacts scattered for a distance of 100 meters around the point (see Table 21). Unfortunately none of the artifacts were recovered from in-situ contexts in the bank face.

Most of the ceramic sherds are sand tempered and relatively thick (6-8 mm.). Two of these sherds are decorated with rows of fingernail impressions (Figure 24e & f). The paste, thickness, and decoration on these sherds are indicative of a late Early Woodland/early Middle Woodland component (Boszhardt 1982). Two non-sand tempered sherds suggest a later component. These are both grit tempered, and although neither is decorated, one is only 4 mm. thick and probably represents a Late Woodland vessel. The other sherd is 6 mm. thick and cannot be affiliated to any particular Woodland occupancy.

Because none of the artifacts were found in-situ, and with the hope of better understanding past sedimentation at this site, a single 1 x 2 meter test pit was excavated in the center of this point. The pit was excavated to a depth of 1.5 meters. All soils were carefully trowelled or skim shoveled. Screening of the soils through a 1/4" mesh was attempted, however, the moist predominately silty soils made this effort impractical in most of the arbitrary 10 cm. levels. This test pit proved disappointing in that cultural materials or other evidence of occupation were not encountered.

The profile of this pit was examined by Professor Richard Anderson of the Department of Geology at Augustana College. In paraphrase of his interpretation, the soils appeared to be of Holocene origin. Although slight changes in soil color and texture were observed, no well developed pre-modern land surface was apparent. It is suggested that this indicates a rather continual deposition of alluvial soils.

TABLE 21 (11Jd134) Surface Collection

LITHICS

Cores (1 fragment)  
Bifaces (1)  
Retouched Flakes (1)  
Intentional Flakes (21)  
Shatter (4)  
Knives (1 fragment)  
Fire-cracked Rock (2 limestone)

CERAMICS

Pre-Havana fingernail impressed body sherds (2 sand  
tempered)  
Undecorated body sherds-grit tempered (1 cordmarked)  
Undecorated body sherds-sand tempered (11 cordmarked)  
Exfoliated grit tempered sherds (1)  
Exfoliated sand tempered sherds (2)

ORGANIC

Burned Bone (3)

(11Jd121) Switzer Lake East Side

Surface collection of the eastern shore of Switzer Lake a lowland floodplain backwater recovered considerable evidence of prehistoric occupation. Switzer Lake's eastern shore (elevation 595-600') is actually the edge of the Illinois mainland. The shore is wooded with a species composition of Red Oak, River Birch, and Silver Maple. Towards the northern end, at a distance of about 50 meters east of the water, and approximately the same elevation as the shore, is a cultivated field which occupies the remainder of the mainland as far east as U.S. Hwy. 20 just below the bluffs.

With the water of the pool just below 9', materials were exposed in redeposited contexts on the shore of the lake. The density of recovered materials increased towards the northern end. This may be the result of differential shoreline conditions rather than actual artifact density. Towards the southern end of the lake, the shoreline becomes increasingly more sandy. The sand probably has covered redeposited artifacts. At the northern end, the shore is firm silt on which artifacts are clearly exposed. The materials collected from the shore are listed in Table 22. In addition, the extreme west edge of the cultivated field (corn) was surveyed. One biface and a piece of chert shatter were collected indicating the site extends at least 50 meters to the east of the shore. Unfortunately, none of these materials are diagnostic, nor were any recovered from in-situ contexts of exposed bank.

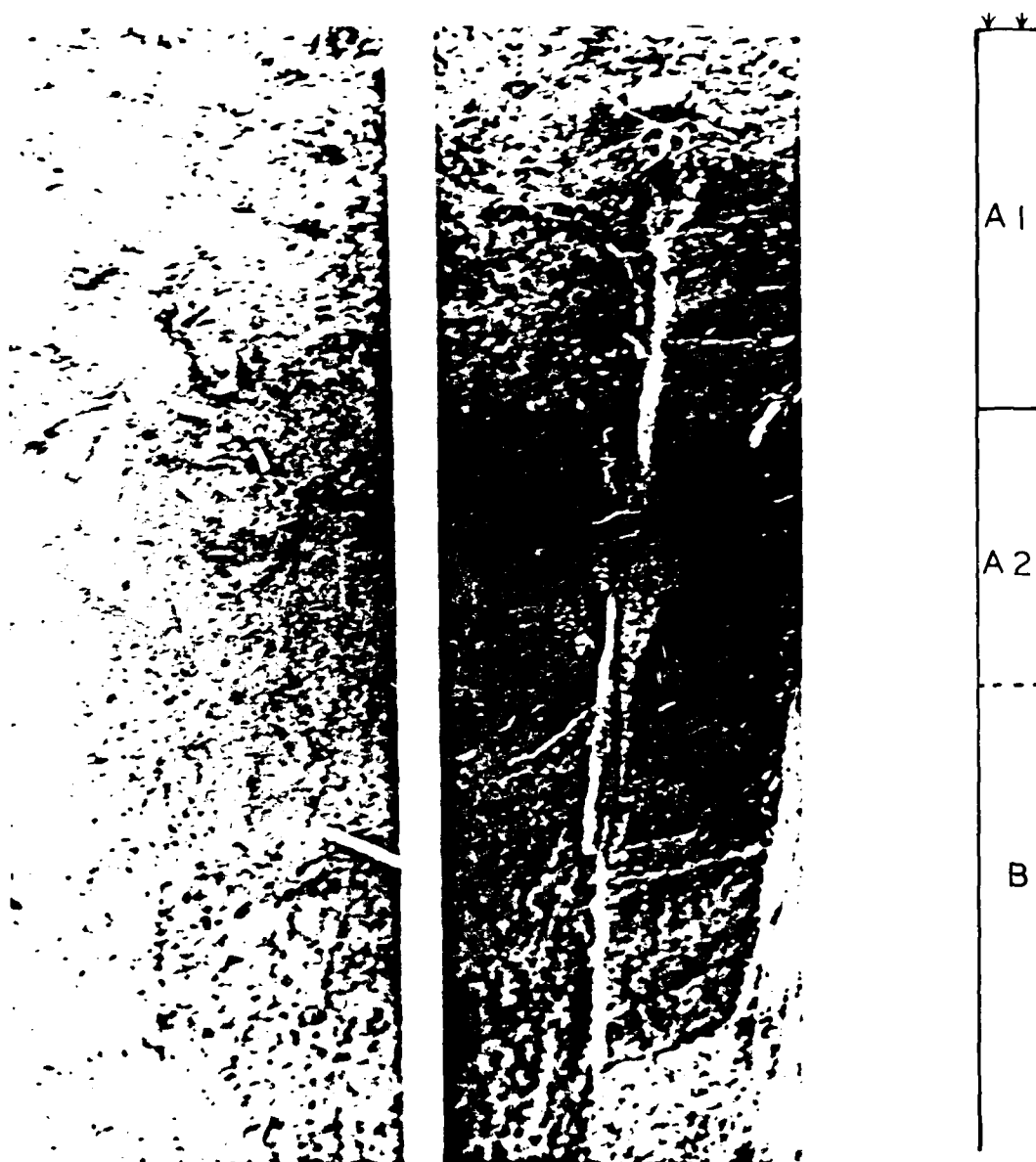
For purposes of identifying the depth of occupation(s), and with the hope of recovering diagnostic materials, one 2x2 meter test pit was excavated on the wooded shore about 50 meters from the shallow northern end of the lake. The test pit was located ca. 20 meters from the lake shore with the present surface approximately 1.2 meters above the water level (9'). All soil was carefully trowelled and/or skim shovelled. The top 40 cm. were screened through 1/4" mesh hardware cloth. Below 40 cm., screening was abandoned as materials ceased to be recovered. Levels were kept in arbitrary 10 cm. vertical units.



Numerous prehistoric materials were recovered during the excavation of the test unit at 11Jd121 (see Table 22). These included a side notched triangular projectile point, (Figure 21f) and several small grit tempered body sherds. The projectile point indicates a late prehistoric occupation. The pottery sherds are all relatively thin (3-5 mm.) and indicates a Late Woodland component.

Surprisingly, the artifacts were concentrated in the top 35 cm. Prehistoric materials were recovered as shallow as 4 cm. below the surface. This suggests a lack of soil deposition at this site during the historic period. Below 35 cm. material significantly decreased with only a few pieces of chert shatter recovered at depths between 50-80 cm.

Professor Richard Anderson inspected the profiles of the test pit and aided in the interpretation of soil development. These profiles showed a deep organically stained A zone to a depth of about 45 cm. This horizon gradually blended to a light brown B zone (Figure 26). Soils of both zones were sandy silt loams which continued to the water table (1.2 meters). Soils of both zones were sandy silt loams. Interestingly the deep A zone was seen to be sharply truncated at 25 cm. From 0-25 cm. the soil was a slightly lighter brown and noticeably looser than between 25-45 cm. The sharp interface between these two sub-zones is interpreted to be the result of plowing. The 1892 MRC map does indicate a cultivated field in this location. The interpretation of the plowzone is also strengthened by the recovery of historic cinders and glass within the top 25 cm.



A1: (0-25 cm.) Plowzone  
A2: (25-45 cm.) Nondisturbed A Horizon dark brown silt loam.  
B: (45-110 cm.) B Horizon orange-brown silt loam.

Figure 26: 11 Jd 121, Test pit profile.

The deep dark A zone probably indicates a long period of stable surface and soil development. This contrasts with the interpretation of the soil development at the test pit at site 11Jd134. The relative age of the upper soils at the Switzer Lake site is further supported by the presence of (late) prehistoric artifacts near the surface of the test pit. It was somewhat surprising to find Late Woodland materials so near the surface at this site. Historic flooding undoubtedly covered this area, and logically, recent sedimentation should have occurred. It is possible that the location of the site at the northern end of a backwater lake in such a position that sediments carried in the water may have been deposited before the flood waters covered this area.

In summary, the Switzer Lake site appears to be a late prehistoric (Late Woodland) occupation. This component is stratigraphically very shallow, and evidence indicates the upper portions have been mixed from past historic cultivation.

TABLE 22 (11Jd121) Surface Collection (South End)

LITHICS

Cores (29)  
Intentional Flakes (3)  
Shatter (1)  
Unmodified Rock (2: 1 chert cobble, 1 limestone)

Surface Collections (North End)

LITHICS

Bifaces (2)  
Retouched Flakes (3)  
Intentional Flakes (43)  
Shatter (18)  
Scrapers (3)  
Hammerstones (1 chert)  
Fire-cracked Rock (1)  
Unmodified Rock (11: 10 pebbles, 1 chert chunk)

HISTORIC

Metal (1 iron)  
Miscellaneous (2 cinders)

Surface Collection (Cornfield)

LITHICS

Bifaces (1)  
Shatter (1)

Test Pit (0-10 cm.)

LITHICS

Intentional Flakes (3)  
Shatter (4)  
Unmodified Rock (1 limestone)

HISTORIC

Metal (1 iron hook)  
(10-20 cm.)

LITHICS

Intentional Flakes (6)  
Shatter (9)  
Fire-cracked Rock (12: 9 fractured cobbles, 3 limestone)

TABLE 22 (continued)

CERAMICS

Exfoliated-grit tempered (3)

ORGANIC

Burned Bone (1)  
Charcoal

HISTORIC

Miscellaneous (6 cinders)

(20-30 cm.)

LITHICS

Intentional Flakes (4)  
Shatter (9)  
Points (1 triangular side notched)  
Unmodified Rock (18: 14 limestone, 4 pebbles)  
Miscellaneous (14: 13 broken cobbles, 1 slate)

CERAMICS

Undecorated Body sherds-grit tempered (3 cordmarked)

HISTORIC

Glass (1 fragment)  
Miscellaneous (2 cinders)

(30-40 cm.)

LITHICS

Intentional Flakes (2)  
Shatter (9)  
Unmodified Rock (2 pebbles, 1 chert chunk)  
Fire-cracked Rock (10 cobbles)

(50-60 cm.)

LITHICS

Shatter (1)

(70-80 cm.)

LITHICS

Shatter (2)

(11Jd122) Switzer Lake Northwest Peninsula

This site was located on a raised peninsula that extends into Switzer Lake from the northwest. Much of the land of this peninsula is low, blending into willow and marsh areas which typify bays at the northeast and northwest ends of this lake. However, near the tip of the point, the land rises slightly to ca. 600' creating a solid surface encompassing ca. 50 x 50 meters. The vegetation of the raised area is almost exclusively Silver Maple. There is very sparse under growth. Although the surface of this point is 5' lower than that at 11Jd121 on the eastern shore of Switzer Lake, the soils appear to be comparable. Soil observed in the partially eroded east bank of the point was a light orange-brown silty loam containing a few areas of small pebbles.

Prehistoric materials were recovered from the east side of the raised point for a distance of about 50 meters along the shore. Although the bank has only minor vertical exposure, this shore is characterized by a relatively sharp slope which is covered by a mat of exposed roots. Small areas of cleanly exposed banks may be seen increasingly with lower water levels.

The artifacts recovered are listed in Table 23. Of these the only diagnostic artifact is an eroded grit tempered body sherd, this sherd measures 4 mm. thick, and although the exterior surface is eroded, the original thickness was probably not much greater. The thickness, temper and paste of this sherd is indicative of a Late Woodland component.

As noted earlier, the artifacts listed in Table 23 were collected from redeposited contexts, thus precluding documentation of the depth of cultural deposits. However, a field check made on 9/20/81 observed a concentration of burned limestone partially exposed on the upper portions of the sloping shore. The depth of this apparent prehistoric feature below the modern surface is ca. 20 cm. If this concentration is the result of prehistoric activity, the shallow depth indicates geomorphological similarity to 11Jd121.

TABLE 23 (11Jd122) Surface Collection

LITHICS

Intentional Flakes (6)  
Shatter (5)  
Fire-cracked Rock (3: 3 limestone, 1 basalt)

CERAMIC

Eroded-grit tempered Body Sherd (1)

TABLE 24 (11Jd127) Surface Collection

LITHICS

Cores (1)  
Bifaces (1 fragment)  
Retouched Flakes (1)  
Intentional Flakes (9)  
Fire-cracked Rock (1 granite)  
Unmodified Rock (2 limestone)

CERAMICS

Hopewell Red Filmed (1 body sherd)

(11Jdl27) Frentress Lake East End Point

At the east end of Frentress Lake is a point of land (elevation 595-600') which is forested with widely spaced mature oaks. Between the oaks the area is open from a clearing for a former structure. The 1930's pre lock and dam one foot contour maps available in the archives at the Rock Island District Corps of Engineers show two structures at this site. No structures are indicated on the 1833 M<sup>N</sup>ississippi River Commission map (Chart No. 161) for this location. The shore is severely eroding, and in the surface of the exposed bank are concrete and limestone slabs from the historic occupation. Historic and prehistoric materials litter the beach.

Prehistoric materials were only recovered with the water levels below 7.5' and from redeposited contexts on the beach shore. Those collected are listed in Table 24. None of the lithics are diagnostic of a particular prehistoric component. The single ceramic sherd is unique to the sample recovered in the Pool 12 survey. This sherd is grit tempered, with a sandy paste, and is 10 mm. thick. The exterior surface is smoothed and coated with a red slip (Figure 20a). Red slipped ceramics are reported for Middle Woodland (Griffin 1952:118) and Mississippian ceramics (Bennett 1945:139, 145, 147). Based on the paste and thickness this sherd is interpreted as representing the type Hopewell Red Filmed (Griffin 1952:118), and as being diagnostic of a Middle Woodland component.



(11Jd123) Switzer Lake Outlet, North Side

The north side of the outlet of Switzer Lake is the southeast tip of a long levee formation (elevation 595') which originates to the northwest at East Dubuque. The southeast end of this levee forms the southwest side of Switzer Lake, the southwest face of which is exposed to a wide expanse of the river, and is severely eroding. At the very tip of the levee, and just inside the outlet of Switzer Lake, a single chert flake, 1 burned bone fragment, and a concentration of unburned limestone was recovered. The eroded west shore of the levee was collected for a distance of 50 meters to the north of the outlet, however, no materials were recovered. This may be the result of the shore there being very sandy where materials might be quickly covered after falling from the bank. Obviously, no temporal or cultural assignment may yet be suggested for this site.

TABLE 25

(11Jd123) Surface Collection

LITHICS

Intentional Flakes (1)  
Unmodified Rock (3 limestones)

ORGANIC

Burned Bone (1)

(11Jdl32) Tippiies Lake

This site is located on the east side of a narrow backwater lake known locally as Tippiies Lake which was undoubtedly a former meandering channel/slough of the river. The east and west sides of the lake are levees. The bank on the east side of Tippiies Lake (elevation 595') is eroding at a lesser rate than most of the sites encountered during the Pool 12 survey. Only when water levels are relatively low, (e.g. below 8'), is the lower portion of this bank exposed. The upper meter is in most places, protected by vegetation. Mature species include Oak, Cottonwood, River Birch and Silver Maple. The exposed soils appear to be light brown silty loam.

Surface collection of the shore at low water (7.0') yielded only a few prehistoric artifacts in redeposited contexts (Table 26). None of the artifacts recovered are diagnostic. These materials were sparsely scattered for a distance of 200 meters along the shore beginning at the lower end of the lake, directly east of the entrance to the lake. At the southern end of the site are indications of probable historic occupation including a concentration of large limestone slabs. Approximately 75 meters north of the lower end of the site, a shell midden was observed eroding from the bank. It was not determined whether the shell midden represents a prehistoric or historic activity.

TABLE 26 (11Jd132) Surface Collection

LITHIC

Cores (3)

Intentional Flakes (1)

Unmodified Rock (5: 1 broken basalt cobble, 4 small pebbles)

ORGANIC

Shell (8 valves)

SUMMARY:

The foregoing description of specific sites, cultural materials recovered, components represented, and various attributes of site location are summarized in Table 27. A brief review of this tabulation, when integrated with other information generated by this investigation, presents some interesting problems for both land managers and archaeologists. As indicated by Eichhorn (1981), past conceptualizations of occupation and utilization of the Mississippi River floodplain need to be re-examined. The model of transitory extraction camps or other functionally specific short-term occupations is not supported by the diversity portrayed in the assemblages from most of the reported sites in the Pool 12 environs. As well, the variability of geomorphological contexts on (in) which prehistoric sites occur is frankly amazing. As indicated in Table 27, sites are to be found almost anywhere on the floodplain with the exception of slough margins. In the latter instance, we would submit that the absence of sites is more a reflection of our inability to examine slough margins, owing to the fact that they are so rapidly being subjected to siltation, and not a true portrayal of prehistoric settlement patterns.

While our data are not as refined as we would like, the utility for comparisons with other reaches of the Mississippi River should be self-evident. The absence of a well defined Archaic presence in Pool 12 is interesting if equivocal. The full range of Woodland cultures represented in our sample, biased though it may be, may prove of critical importance in the future both for the refinement of culture histories as well as for the examination of how settlement and resource procurement systems varied in the region. Finally, while the results of this survey may create difficult management problems, the research potential of this previously unexplored habitat is now dramatically underscored.

TABLE 27 - Site Configuration Summary

SITE	FORMATION	ELEVATION	SOILS	VEGETATION/ CONDITION	EROSION	COMPONENT	DEPTH
11Jd86	Low Pleistocene Deposit	600	Sandy	Corn/cultivated	Moderate	Late Archaic-early Middle Woodland	Surface
11Jd113	Pleistocene Terrace	615	Sandy	Grass/Campground	Moderate	late Early Woodland	Surface
11Jd114	Pleistocene Terrace	610	Sandy	Corn/cultivated	Moderate	Late Archaic-late Middle Woodland	Surface
11Jd115	Pleistocene Terrace	615	Sand/Gravel	Weeds/Quarry pit	Severe	Late Archaic-Late Woodland	Surface
11Jd116	Side Channel	590-595	Silts	Lowland Forest	Severe	Late Woodland-Hist.	80-125 cm.
11Jd121	Backwater Lake	595-600	Silty loam	Lowland Forest (Oak) also cultivated	Moderate/ Severe	Late Woodland-Hist.	0-35 cm.
11Jd122	Backwater Lake	600	Silty loam	Lowland Forest	Moderate/ Severe	Late Woodland (?)	50 cm.
11Jd123	Backwater Lake	600	Silts/Sands	Lowland Forest	Severe	(?)	(?)
11Jd124	Main Channel	595	Silts/Sands	Lowland Forest/ Foundations	Severe	Prehist.-Hist.	(?)
11Jd125	Side Channel	595-600	Silts/Sands	Lowland Forest (Oak)	Severe	late Early Woodland-Late Woodland	200 cm.
11Jd126	Side Channel	595-600	Silts/Sands	Lowland Forest (Oak) Barge Terminal	Severe	Late Woodland	50 cm.
11Jd127	Backwater Lake	595-600	Silts/Sands	Oak Clearing/ Foundation	Severe	Middle Woodland-Historic	(?)
11Jd128	Side Channel	595-600	Silts/Sands	Lowland Forest (Oak)	Severe	late Early Woodland-late Middle Woodland	(?)

TABLE 27 - Continued

SITE	FORMATION	ELEVATION	SOILS	VEGETATION/ CONDITION	EROSION	COMPONENT	DEPTH
11Jd129	Side Channel	595-600	Silts/Sands	Lowland Forest (Oak)	Severe	late Middle Woodland- Historic	100-150 cm.
11Jd130	Side Channel	595	Silts/Sands	Lowland Forest	Severe	Late Woodland (?)	(?)
11Jd131	Main Channel	595-600	Silts/Sands	Lowland Forest	Severe	Late Woodland	(?)
11Jd132	Backwater Lake	595	Silty loam	Lowland Forest (Oak)	Moderate	(?)	(?)
11Jd133	Main Channel	595	Silts	Lowland Forest	Severe	late Middle Woodland- Late Woodland	(?)
11Jd134	Backwater Lake	595	Silts	Lowland Forest	Severe	early Middle Woodland- Late Woodland	(?)
11Jd135	Pleistocene Deposit	620	Sandy	Grass & Hay/ Cultivated	Moderate	Late Archaic- Middle Woodland	Surface
11Jd136	Pleistocene Terrace	610-615	Sand/Gravel	Grass & Hay/Houses, Cultivated	Severe	Middle Archaic- Late Woodland	Surface
13Jb59	Pleistocene Terrace	640	Sand/Gravel	Weeds/Quarry pits	Severe	(?)	Surface
13Jk75	Pleistocene Terrace	640	Sand/Gravel	Weeds/Quarry pits	Severe	(?)	Surface
13Jk77	Pleistocene Terrace	600	Sand/Gravel	Grass, Trees/Houses, Park	Moderate	early Middle Woodland	Surface

RECOMMENDATIONS:

Of the 24 archaeological sites located through the efforts of this investigation, many are in need of immediate management attention. Others, notably those on relatively stable land forms like Pleistocene terraces, are not immediately endangered and thus, management recommendations need not be so rapidly pursued. However, these sites also likely have significant potential to enhance the understanding of occupational history and the cultural processes that stimulated cultural change during the Holocene. Thus, management of these non-endangered sites certainly warrants consideration, albeit a less critical form. As well, prior to providing a series of alternative recommendations it seems appropriate to first state, in some detail, the basic assumption from which the alternatives are developed.

As previously stated in this report, the conclusion that construction and maintenance of the lock and dam system has damaged and continues to destroy archaeological sites is inescapable. At the same time, quantification of this damage and destruction is elusive. Finally, the forces of destruction, primarily scouring and other erosional factors, do not apply equally across the pool. In spite of this recognized variability, across-pool generalizations regarding both the nature and extent of impacts on both historic and prehistoric cultural resources can be stated. These generalizations derive in large part from two sources. The first source stems from the conclusions drawn by participants at a cultural resources impact workshop held in St. Louis, Missouri on June 25-26 1981. Participants at the workshop included regional state historic preservation officers, archaeologists and historians, representatives of the Upper Mississippi River Basin Commission, and representatives of the River Recreation Research Consortium. R. Stanley Riggle, Iowa State Historical Department, Division of Historic Preservation served as moderator for the workshop. The second primary source, which also integrates data generated by



the workshop participants, is a paper presented to the Midwest Archaeological Conference held in Madison, Wisconsin October 16-17, 1981. The paper entitled "Assessing Navigation-Related Impacts on Cultural Resources of The Upper Mississippi River System" was presented in a conference symposium, Impacts of Navigation on Archaeological Resources in the Upper Mississippi River System, and was authored by James H. Gramann, Department of Forestry, University of Wisconsin-Madison. Gramann's paper utilizes both the St. Louis workshop summaries and his own information sets collected under the auspices of the Upper Mississippi River Basin commission through its contractee, the River Recreation Research Consortium. Finally, additional data to support Gramann's generalizations were provided by Dr. James B. Stoltman, Department of Anthropology, University of Wisconsin-Madison and Mr. Richard Dexter, compliance officer for Historic Preservation Division, the State Historical Society of Wisconsin. Taken together the geographical, academic, and compliance ranges of the various participants serve to underscore the comprehensive expertise utilized in generating the generalizations regarding impacts on cultural resources in the study area. While one may not be impressed with the level of qualification, a limitation both recognized and identified by the participants, the collective knowledge and expertise is impressive indeed.

Based upon the findings of the St. Louis workshop and his own investigations Gramann provides both narrative descriptions, which include site-specific examples, and tabular format data to identify navigation-related impacts. For example, his Table 1 summarizes 6 navigation factors that are causally linked to specific impact type (1981:6)

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RELATIONSHIP BETWEEN NAVIGATIONAL FACTORS AND TYPES  
OF IMPACTS ON CULTURAL RESOURCES OF THE UMRS

<u>Navigational Factor</u>		<u>Impact Type</u>
Barge Traffic	causes	Bank Erosion
Pool Fluctuation	causes	Bank Erosion, inundation
Recreational Use	causes	Vandalism, bank erosion, ground disturbance
Fleeting/Terminals	causes	Ground disturbance, bank erosion
Dredging	causes	Site burial, ground disturbance (in submerged areas)
Structural Aids	causes	Bank erosion, site burial, (under river sediment)

These causal relationships are strongly stated in the narrative description of the workshop findings:

There is no question that cultural resources along the UMRS are being seriously impacted by river management practices, as well as by natural processes which often are aggravated by management practices.

Workshop assessments of the relative seriousness of the different impact types depicted in Table 1 indicate the following rank-order from most serious to least serious: (1) bank erosion, (2) vandalism, (3) burial river sediments, (4) inundation, (5) burial by dredged material, (6) ground disturbance. In general, each of the 6 impacts can occur on all sections of the UMRS. In those cases where significant geographical distinctions were noted, these are included in the following impact generalizations. However, in most cases the potential for the impacts described does not vary greatly from region to region on the river system (Gramann 1981: 6-7).

We take little exception to the findings of the participants of the St. Louis workshop, nor, for that matter, to the integration of those and other data in the Gramann report (1981). The generalizations regarding navigational factors and impact types previously noted all apply to Navigation Pool 12 with one notable exception. In other reaches of the Mississippi River vandalism is cited as the second most serious impact type. This is certainly not the case in Pool 12. During the field phase of these investigations Mr. Boszhardt made serious and continuous attempts to interview local collectors or others who might have knowledge of historic and prehistoric sites on the flood plain in Pool 12. The list of major informants is appended to this report and represents a significant number of individuals with intimate knowledge of the local situation. In no instance was there any intimation of site vandalism in Pool 12 nor was any such vandalism discovered during the inspection of many miles of exposed shoreline within the pool. As a result, it is not likely that vandalism at exposed archaeological sites in the pool warrants such a high priority ranking as in other reaches of the Mississippi and its tributary drainages where vandalism is a much more pressing concern.

Assuming that the foregoing data are a valid representation of both forms and relative magnitude of impacts on cultural resources within the confines of navigation pool 12 the following recommendations are presented. As well, the alternative recommendations should be taken at face value. That is to say, the alternatives presented reflect a particular form of activity that can be followed as well as the projected result, in our opinion, should that activity be followed. The three alternatives are as follows: (1) take no action whatsoever; (2) implement protection measures; and (3) implement a program of additional survey and testing of known sites.

No action alternatives:

One alternative action the Rock Island District, Corps of Engineers could follow would be to take no action at all. This would perhaps be the most attractive alternative from the perspective of anticipated fiscal restraints be they real or imagined. To follow this course of inaction would allow for the continued destruction of cultural resources via the extant processes of erosion from commercial and recreational boat traffic as well as the continued attrition via other erosional processes that are accelerated by the maintenance of the lock and dam system.

It is not possible to quantify the actual amount of annual shoreline loss but 1-2 meters per year seems a reasonable estimate from pool 12 and from additional data collected for pool 10 (James Theler, personal communication). Given this rate of loss, which may not be a totally accurate appraisal, it is likely that some of the sites encountered during the course of these investigations could be totally destroyed within a few years time.

This alternative would be unacceptable to both RID-COE land managers as well as those with vested interests in cultural resources. Perhaps the most compelling argument against the no action alternative can be found in RFP DACW25-80-B-0017 which presents the reason for initiation of the Pool 12 investigation and commits Federal funds as an investment in the cultural resources located within the pool environ. The RFP is explicit in its rationale by indicating that the reason for initiation of the project is both for purposes of compliance with Executive Order 11593 and Public Law 93-291, and, to evaluate the effects of erosion from maintenance of the pool on the cultural resources within the pool. In light of these a priori objectives and the dramatic nature of our results it becomes literally impossible to support a no action alternative.

Protective measures alternative:

The results of these investigations provide unequivocal evidence that prehistoric and historic archaeological sites are being destroyed by erosion at the headlands and lateral margins of islands in the pool and along the primary banks of the Mississippi River. Implementing measures that would protect known sites from continued destruction by erosion warrant some discussion. Two specific measures of protection have been utilized in the region for the protection of archaeological sites: burial by dredge disposal, or protection by rip-rap.

The first of these measures is technologically feasible. The cost feasibility of burying known archaeological sites cannot be addressed here as we simply lack the competence to do so and should indicate that this issue would be more expertly addressed by RID-COE cultural resource management personnel. We can note, however, that burial under dredge spoil for purposes of protection is not unknown. For example, the FTD site (13 AM 210) in Pool 10 near MacGregor, Iowa was buried under dredge disposal to reduce erosional impacts (Gramann 1981). In addition, because the typical sandy dredge spoil provides attractive beaches, the FTD site, once buried, was covered with fallen logs and planted with grass and willow to remove the recreational attraction and hence the potential for vandalism (Gramann 1981: 20).

A potentially negative factor of burial by dredge disposal is inaccessibility. At some future time, when resources and appropriate interests prevail, Gramann notes:

In instances where recorded sites of high significance are exposed to impacts from either vandalism or bank erosion, intentional burial under dredged material may be a cost-effective measure for promoting preservation of the site, although it will also complicate subsequent excavation (1981: 19).

The second method of reducing the source of impact, that is to say, rip - rap placement has also been utilized for site protection in the Upper Mississippi River valley. Rip-rap shoreline stabilization, however, would not likely be as cost effective as protection by dredge spoil burial. The benefit here is construed to be one of permanence. Dredge disposal is subject to the same reworking by hydrological forces as any other sediments while rip-rap represents a more enduring buffer to erosion.

Neither of these methods are deemed appropriate at this time for several reasons. First, a cost-analysis should be completed which would reflect the relative expense of the protection measures as opposed to excavation. Of additional concern is the fact that at this juncture we are unable to recommend any of the sites for protective measures because we are not certain regarding their research potential. Essentially, we lack empirical bases to provide priority ranking for site protection because all of our samples from the flood plain sites were either from disturbed contexts or from sites exposed in profiles. It would be unconscionable to recommend protection measures of any kind for any site until it was determined that the site would meet the criteria of eligibility for The National Register of Historic Places.

#### Additional Survey & Evaluative Testing Alternatives:

A third management alternative, that of conducting additional survey and test excavations at selected known sites appears to be the best alternative both from the perspective of sound cultural resource management as well as from the view of cost-effectiveness. There are now sufficient data at hand regarding the densities of sites within the pool 12 environs, the differential topographic situations in which sites occur and a much better understanding of the cultural history of the prehistoric occupants of the flood plain and adjacent terrace settings. The benefit here is that where we have failed in terms

of generating a predictive model, we have provided adequate base data so that cultural resource managers should now be properly equipped to address the very difficult problems, in this topographic context, that must be overcome before an adequate predictive model can be developed.

Of additional note here is the wisdom of those individuals who developed the request for proposal. Without the emphases placed on sediment geomorphology our results would have been decidedly different. We are not prepared to suggest that pool 12 is unique in the Upper Mississippi River Valley, however, it is likely that the pool differs from others in certain fundamental ways. Nonetheless, had we not been fortunate enough to have sound assistance and direction from Dr. Richard C. Anderson, Augustana College, and Dr. James Knox, University of Wisconsin-Madison, our understanding of site burial, rapid post-historic sedimentation, locally dynamic situations of erosion and deposition, and various other factors would have precluded the possibility of developing useful base data that can be applied effectively in future studies. For these reasons, we would strongly urge that any future cultural resources investigations sponsored by RID-COE in this pool or others in the Upper Mississippi River Valley be required to address the problems associated with recent depositional history. No predictive model will have much utility in Pool 12 unless it utilizes the information compiled by Dr. Anderson and integrated with this report.

Finally, with regard to additional survey work in Pool 12, the logistical difficulties should be apparent. Many of the locations that need to be subjected to additional investigations are insular settings. In some cases these islands, Nine Mile Island as a prime example, are extremely difficult in terms of access. Any further sampling strategy should explicitly address the problems of logistics, how those problems would be overcome based on past experience in insular habitats, and how sampling strategies would be designed to maximize yields from insular settings where prehistoric land surfaces are buried under 3 to 6 feet of recent alluvium.



In addition to future archaeological survey which would lead to more effective cultural resources management as well as filling a gap in both the theoretical and empirical realms of Upper Mississippi Valley prehistory.

As previously indicated, the most cost effective recommendation that we can offer at this juncture is to implement a program to test a sample of the sites we have located during the course of the field inventory. It is quite obvious that resources are not now in hand, nor will they ever likely be, to effectively protect, manage and enhance all of the historic and prehistoric sites located on the margins (as well as those inundated within) pool 12. This realization makes it important, as well as feasible, to identify and evaluate a representative sample of those sites. It is difficult to anticipate future theoretical orientations. It is equally difficult to satisfy the orientations of all contemporary archaeologists working in the Upper Mississippi Valley. Nonetheless, the following evaluation recommendations are made by site-specific clusters. The clusters represent sites that we feel are important for purposes of answering general research questions such as settlement and subsistence strategies locally. As well, the sites were selected with a careful eye on the location of occurrence in relation to overburden depths, potential for stratification, and other factors. This is not meant to indicate that any other sites within the pool are unimportant. Rather, it reflects our best estimate using preliminary information how sites could be placed in a priority ranking to answer particular and traditional research questions.

The first configuration of sites is based on their potential, through test excavations, to address questions of local culture history. In this instance the priority ranking is

a function of the range and number of diagnostic artifacts. Also considered in this configuration, with one notable exception, is the potential both for physical separation of occupation zones and for providing relative dates of sedimentation. The sites are ranked as follows:

1. 11Jd138 Middle/Late Archaic-Late Woodland  
(occurs on a Pleistocene Terrace)
2. 11Jd128 late Early Woodland-late Middle Woodland
3. 11Jd134 late Early Woodland-Late Woodland
4. 11Jd125 Middle Woodland-Late Woodland  
(possible Early Woodland Component)
5. 11Jd133 late Middle Woodland-Late Woodland  
(possible Early Woodland Component)

The second configuration of a recommended site sample for test excavations is based on known faunal and floral preservation. This cluster should be tempered with the knowledge that most buried sites should manifest excellent preservation. This cluster, however, is based on empirical realities. The sites are ranked as follows:

1. 11Jd126 Both burned and unburned bone recovered
2. 11Jd128 Burned bone recovered
3. 11Jd129 Both burned and unburned bone recovered
4. 11Jd133 Burned bone recovered
5. 11Jd115 Private collections of unburned bone  
(Miller collection)

The third configuration of sites which could be tested to address specific questions is derived from differential topographic settings. These sites would be useful to determine the variability of activities, occupational history, or other cultural phenomena that may well vary with site setting. The priorities are:

1. 11Jd126 Lowland floodplain, side channel
2. 11Jd122 Lowland floodplain, backwater lake margin
3. 11Jd133 Lowland floodplain, Main channel
4. 13Db59 High Pleistocene Terrace (Iowa, west side)
5. 11JD115, or 138 Low Pleistocene Terrace (Illinois, east side)

While good arguments can be made for implementing a program of extensive testing for any and all of these configurations I think it would be premature to initiate a program at this time. This is based on the equivocal nature of our data which is extracted by and large from disturbed contexts or exposed profiles. As a last consideration we would recommend a pilot testing study at only two sites: 11Jd133 and 11Jd126. It would be wise to conduct only limited testing at these two important sites for two reasons. First, they would provide a sound appraisal of expectations at other sites within the pool. Second, it would be premature to expend significant Federal funds in the absence of a good understanding of the logistical difficulties of deploying excavation units on the lowland floodplain in insular settings with the potential for radically fluctuating water levels. Thus, prior to any extensive program, minimal expenditures should be made to protect a larger investment both of Federal funds and the archaeological data base in Pool 12.

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DEPARTMENT OF THE ARMY  
ROCK ISLAND DISTRICT, CORPS OF ENGINEERS  
CLOCK TOWER BUILDING  
ROCK ISLAND, ILLINOIS 61201

REPLY TO  
ATTENTION OF:  
NCRED-PE

19 JUL 1982

Dr. David Overstreet  
Great Lakes Archaeological  
Research Center  
P.O. Box 1304  
Waukesha, Wisconsin 53187

Dear Dr. Overstreet:

Inclosed you will find review comments for your Comprehensive Survey Report entitled Preliminary Investigations: Archaeology and Sediment Geomorphology, Navigation Pool 12, Upper Mississippi River that was submitted to Rock Island District under contract DACW25-81-C-0045. The District and reviewers feel that this is an excellent reconnaissance report which fully satisfies the requirements stated in the Scope of Work and which will stand as a major contribution to Upper Mississippi River archaeology. The survey report describes the application of an integrated archaeological-geomorphological approach designed to identify prehistoric land surfaces in order to overcome past difficulties with site burial in a major alluvial setting. The results of this sample survey indicate that past conceptions and models of Mississippi River prehistory for this area have overlooked a substantial portion of the local cultural resource base.

The comments from the National Park Service Rocky Mountain Regional Office (Inclosure 1) are brief and no changes are recommended for the final comprehensive survey report. The Chief of the Compliance Section from the State Historical Society of Wisconsin mentions several editorial changes for consideration (Inclosure 2). The Illinois State Historic Preservation Officer's comments (Dr. Brown, Staff Archaeologist) are again mostly editorial in nature except for questions about the sampling procedure and historic resources in the study area (Inclosure 3). The above comments will be considered for the final document, as will the District's comments attached as Inclosure 4. Comments from the Iowa State Historic Preservation Officer are also included for your information; no major changes are suggested (Inclosure 5). You are advised to proceed with production of the final comprehensive survey reports as required in the Scope of Work and modifications thereto.

Attached are comments from the Illinois State Historic Preservation Officer for the Addendum to the Comprehensive Survey Report entitled Archaeological Testing and Evaluation of 11Jd126. Only minor editorial changes are suggested (Inclosure 6). This is the only review for this report. In order to complete this contract, you are advised to submit the final report on this work by 30 August 1982.

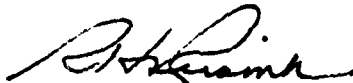
NCRED-PE

19 JUL 1961

Dr. David Overstreet

If you have any questions, please call Mr. Charles R. Smith at 309/788-6361,  
Ext. 6344.

Sincerely,



R. H. REESINK  
Chief, Procurement and Supply Division  
Contracting Officer

6 Incl  
As stated



# United States Department of the Interior

NATIONAL PARK SERVICE  
ROCKY MOUNTAIN REGIONAL OFFICE  
655 Parfet Street  
P.O. Box 25287  
Denver, Colorado 80225

IN REPLY REFER TO:

H2415 (RMR) CR

MAR 9 1982

Mr. Doyle W. McCully  
Chief, Engineering Division  
Att: Mr. Roy Eichhorn  
Rock Island District  
Corps of Engineers  
Clock Tower Building  
Rock Island, Illinois 61201

Dear Mr. McCully:

In response to your request, we have reviewed the draft technical report entitled, "Preliminary Investigations: Archaeology and Sediment Geomorphology, Navigation Pool 12, Upper Mississippi River." Due to the short period of review, we are unable to provide thorough, individual reviews.

Our brief inspection of the report indicates that it adequately addresses the Scope-of-Work, as amended, and possesses a high degree of technical merit. Both findings and recommendations are supported by the evidence, and merit further attention.

Thank you for allowing us to review this report; we trust that our comments prove useful.

Sincerely yours, ..

Jack R Rudy, Chief  
Branch of Interagency Archeological Services

Year of  
the  
Visitor

THE STATE HISTORICAL  
SOCIETY OF WISCONSIN

816 STATE STREET / MADISON, WISCONSIN 53706

March 30, 1982

Mr. Doyle W. McCully  
Chief, Engineering Division  
Rock Island District, Corps of Engineers  
Clock Tower Building  
Rock Island, Illinois 61201

SHSW: 145-82  
RE: Navigation Pool 12,  
Upper Mississippi  
River

Dear Mr. McCully:

Our staff archeologist has reviewed the draft report entitled "Preliminary Investigations: Archaeology and Sidiment Geomorphology, Navigation Pool 12, Upper Mississippi River," prepared by Great Lakes Archaeological Research Center, Inc., of Waukesha, Wisconsin.

The report meets the terms of the modified scope of work. Moreover, it makes a valuable contribution by documenting the ongoing destruction of archeological sites in the lowland floodplain by erosion.

We concur with the author's recommendations for additional archeological testing of selected sites within the pool. The results of this testing could be extrapolated to other sites and serve as a guide to the most appropriate mitigation measures for those sites that will be affected by pool maintenance activities.

There are a number of misspellings in the body of the report, several references in the text do not appear in the bibliography, and some passages need to be edited to clarify the author's meaning. We invite the authors to visit our office and examine our copy of the draft report in which we have marked these items.

If you have any questions on this matter, please call either our staff archeologist, William Green (608) 262-2970, or me at (608) 262-2732.

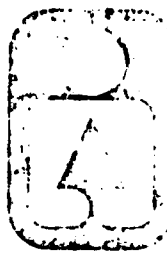
Sincerely,

J  
Richard W. Dexter  
Chief, Compliance Section

RWD:1kr

cc: Mr. David P. Overstreet

Illinois



# Department of Conservation

life and land together

605 W.M. G. STRATTON BUILDING • 400 SOUTH SPRING STREET • SPRINGFIELD 62706  
CHICAGO OFFICE - ROOM 100, 100 NO. LASALLE 60601  
David Kenney, Director • James C. H. H. H., Assistant Director

March 4, 1982

Doyle W. McCully, P.E.  
Chief Engineering Section  
Rock Island District Corps of Engineers  
Clock Tower Bldg.  
Rock Island, IL 61201

Dear Mr. McCully,

The draft report Preliminary Investigations: Archaeology and Sediment Geomorphology, Navigation Pool 12, Upper Mississippi River has been reviewed in this office.

In general the report appears sufficient to fulfill the requirements of the modified scope of work. The advantages of including a geomorphological study are evident in the modified work plan. The recommendation for limited testing for significance is a rational step since it was impossible to obtain predictive information.

The rationale for the survey methodology is given, but the resulting sample is not. Was this a 5% sample as initially proposed? Were all banks surveyed? Islands? More detail is needed on the actual coverage. Although the background study mentions a number of historic activities along the river, no historic sites are mentioned in the survey explicitly. However on p. 118 "the historic occupation" is cited. To what does this refer? What period of occupation? And on page 121 there is a reference to a possible historic occupation. What is the source of this, was it identified as a possible location from maps? artifacts? Couldn't the shell midden have been briefly tested for information of whether it was historic or prehistoric? Is the historic referring to a button making industry?

It is not clear whether or not historic sites should have been expected within the area or not. If so, were they looked for? Would they have been under alluvium? More information is needed on this.

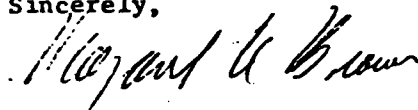
The remaining comments are editorial; there is an inconsistent use of capitalization throughout.

- p. 5 tubular to tabular
- p. 14 Human to human
- p. 17 direct affects to effects (noun)
- p. 29 processess to processes
- p. 36 "restricted accessibility of obtaining complete records"  
rewrite - restricted access to records?

enc 3

- p. 37 pleistocene to Pleistocene
- p. 44 particals to particles
- p. 50 widens pleistocene
- P. 71 Army corps
- p. 81 levee? assume natural one, should be specified, in connection  
with a dam this cannot be assumed  
poll - pool
- p. 94.. parrallel - parallel
- p. 110 Northern - northern
- p. 111 shallow - shallowly
- p. 113 2nd sentence constrasts with
- p. 116 Marsh - marsh
- p. 129 rewrite the last paragraph, it is very unclear
- p. 130 feasible, misuse of the word, likely

Sincerely,



Margaret Kimball Brown  
Staff Archaeologist

## ROCK ISLAND DISTRICT

Branch/Office NCRED-PB(EA) Reviewer C. Smith Ext. No. 6344Subject: Preliminary Investigations: Archaeology and Sediment  
Geomorphology, Navigation Pool 12, Upper Miss. River Date 5-18-82

CMT. NO.	Dwg. or Para. No.	COMMENT
1	Fig. 1	Specific site locations should not appear in the main body of the report as it will be available to the public. Consider a site density map by areas for the main body and reserve the map of site locations for an appendix which can be removed as required in Vol. 2.
2	p. 71	In your opinion, does the historic component described here merit further consideration? Based upon documentary evidence and the artifacts, would it be possible to determine an approximate date for this component.
3	General	Would it be possible to generate hypotheses about specific similarities and/or differences between the newly discovered floodplain sites and the previously discovered upland sites? In what ways might these two major settlement foci be integrated into the overall cultural systems represented in the region?
4	General	Site report headings should be standardized.
5	Optional	The inclusion of your list of informants is good; however, it might be useful to briefly describe contributions or key people that should be contacted in future investigations of Pool 12.
6	General	Overall, this is an excellent reconnaissance report which fully meets the Scope of Work. Furthermore, this document will stand



## ROCK ISLAND DISTRICT

Branch/Office \_\_\_\_\_ Reviewer \_\_\_\_\_ Ext. No. \_\_\_\_\_

Subject: \_\_\_\_\_ Date \_\_\_\_\_

EMT. NO.	Dwg. or Para. No.	COMMENT
		as a major contribution to Mississippi River archaeology. The
		report describes the application of an integrated archaeological-
		geomorphological methodology in order to provide a sample of
		prehistoric landscapes and hence, further definition of the locations
		and nature of archaeological sites. The information supplied in
		this report will be applicable to regional research concerns and
		have utility for both management and planning purposes. The results
		of this reconnaissance suggest that closer attention will have to be
		paid to the potential for significant cultural resources in the
		Mississippi River floodplain and to the problems of site burial and
		changing landscapes.
-1	Addendum	Add a copy of the Scope of Work as an appendix.

IOWA STATE HISTORICAL DEPARTMENT  
DIVISION OF HISTORIC PRESERVATION

ADRIAN D. ANDERSON, DIRECTOR  
STATE HISTORIC PRESERVATION OFFICER

June 11, 1982

Doyle W. McCully, P.E.  
Chief, Engineering Division  
Department of the Army  
Rock Island District, Corps of Engineers  
Clock Tower Building  
Rock Island, Illinois 61201

Re: NCRED-PB, Preliminary Investigations: Archaeology and Sediment Geomorphology,  
Navigation Pool 12, Upper Mississippi River.

Dear Mr. McCully:

We wish to commend the authors on presenting a fine report. The importance of geomorphology and buried sites is of particular significance.

Sincerely,



Adrian D. Anderson, Director  
State Historic Preservation Officer

ADA/vgc

Inc 5

FILMED

9-8